

An Almost Complete Guide to Far Cry 2 Modding

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Contributors

This guide includes information based on the time and effort of the following people:

Hunter - [Far Cry 2: Redux](#)

DannyH2 - [Far Cry 2 Remastered Game \(New Dunia\)](#)

Thirdkeeper - [Far Cry 2 Crew](#)

FoxAhead - [Far Cry 2 Multi Fixer](#)

Infamous Fusion Dev Team - [Infamous Fusion](#)

Knightmare

Lasercar

PuppyUnicorn - [Far Cry 2 Modernized](#)

Glam Stachee - [G.O.R.E: Glam's Overly Realistic Edits](#)

Quick Steps - Editing an existing mod

Step 1: Get your tools ready

Get the packing/unpacking tools from the guide tools package (also available online [here](#)).

I'd also recommend getting Notepad++ to edit the game's .xml files. It's available from [here](#), although it is possible to just use the Notepad built into Windows.

Step 2: Unpacking the patch files

All Far Cry 2 mods come in two files, "patch.fat" and "patch.dat". Get these from your chosen mod and copy them into the same folder as the packing/unpacking tools.

Drag either patch file onto "Gibbed.Dunia.Unpack.exe". This will unpack all the mod's files into a new folder called "patch_unpack".

At this point you can do some edits, such as with the graphics, controls, scripts and some gameplay tweaks. If this is all you need then you can skip to step 5 to repack the files. If your chosen edit requires a file within "entitylibrarypatchoverride.fcb" then you need the next step.

Step 3: Unpacking "entitylibrarypatchoverride.fcb"

Find "entitylibrarypatchoverride.fcb" within \patch_unpack\generated\ and copy it into the same folder as the packing/unpacking tools.

Drag "entitylibrarypatchoverride.fcb" over "Gibbed.Dunia.ConvertBinary.exe". This will unpack the contained files into a new folder called "entitylibrarypatchoverride" and also create a new file called "entitylibrarypatchoverride.xml".

You can now edit the files in the "entitylibrarypatchoverride" folder.

Step 4 (Optional): Decoding .xml files

Some .xml files found in the “entitylibrarypatchoverride” folder need to be decoded for all of their contents to be edited. If you have tried to make an edit but can’t find the section listed in the guide then this is probably the case.

There is a xml decoder included in the tools folder for the guide (also available online [here](#)).

Put any files you want to decode into the “Put xml files to decode in here” folder and then run the file “Start XML Decoder.bat”. This will run and when finished it will show “All XML files processed.”.

The files you copied into the “Put xml files to decode in here” folder are now decoded. You can now copy them back to where they came from, and then make your edits.

Step 5: Packing “entitylibrarypatchoverride.fcb”

Drag “entitylibrarypatchoverride.xml” onto “Gibbed.Dunia.ConvertBinary.exe”. This will pack the files and overwrite the original “entitylibrarypatchoverride.fcb” with a fresh copy.

You can now copy the new “entitylibrarypatchoverride.fcb” back into \patch_unpack\generated\ and overwrite the old file.

Step 6: Unpacking the DLC files

You only need to do this if you want to edit the DLC weapons/vehicles.

Find “entitylibrary.fcb” within \patch_unpack\downloadcontent\dlc1\generated\ and copy it into the same folder as the pack/unpacking tools.

Drag “entitylibrary.fcb” over “Gibbed.Dunia.ConvertBinary.exe”. This will unpack the contained files into a new folder called “entitylibrary” and also create a new file called “entitylibrary.xml”.

You can now edit the files in the “entitylibrary” folder.

Step 7: Packing the DLC files

Drag “entitylibrary.xml” onto “Gibbed.Dunia.ConvertBinary.exe”. This will pack the files and overwrite the original “entitylibrary.fcb” with a fresh copy.

You can now copy the new “entitylibrary.fcb” back into \patch_unpack\downloadcontent\dlc1\generated\ and overwrite the old file.

Step 8: Packing the patch files

Drag the “patch_unpack” folder onto “Gibbed.Dunia.Pack.exe” and this will create new patch files called “patch_unpack.fat” and “patch_unpack.dat”.

You can rename these files to “patch.fat” and “patch.dat” and they now replace your original files. You’re done!

Modding Tools

Several tools are available for Far Cry 2 modding, I will give links to find them in this section and instructions for their use are found in the ‘File Management’ section.

Packing/unpacking

The only mod unpacking/packing tools that will not cause crashes are available [HERE](#).

These are the basic tools for Far Cry 2 modding and if I refer to ‘modding tools’ this is what I mean.

There are other tool sets out there but don’t bother with them, there are certain files that only the linked tools can handle.

.XML Editing

There are a number of text editors out there that can accomplish this but save yourself some hassle and use Notepad++ to edit your .xml files, it’s free and available [HERE](#).

.XML Decoding

Some .xml files will need decoding to be able to edit their entire contents. I will clearly label edits that require the file’s contents to be decoded first.

I have a .xml decoder available [HERE](#).

Hex editing

It's rare that you'll need to use a hex editor but using one can allow you to make edits in files that otherwise can't be opened.

The best free hex editor is Hxd which is available [HERE](#). I use 010 Editor which is way more powerful but costs money. It's possible to use regedit to delete it's registry keys for an infinite free trial but you won't find instructions for that here.

Texture conversion

Far Cry 2 uses the .xbt format for textures and you can't edit these directly, to do so you'll need to convert them into .dds files.

There are multiple tools out there for this but I use RunGUI which is available [HERE](#).

Texture editing

To edit .dds files I'm sure there are also other ways but I use Photoshop and the Intel Texture Works plugin.

Photoshop obviously costs money unless you set sail on the high seas but the Intel Texture Works plugin is available for free [HERE](#).

File Management

This section is going to cover the different file types involved in Far Cry 2 modding and how we can edit them.

.fat and .dat files

These are basically folders full of other files. Almost all the game files are contained in these, including the patch files that we use for modding.

.fat and .dat files come as a pair, you need both for them to work so if you move them don't leave one behind!

For these files use the tools from the 'Packing/unpacking' section above, available [HERE](#).

Unpacking .fat and .dat files

1. Copy both .fat and .dat files into the same folder as your modding tools.
2. Drag either the .fat or .dat file onto "Gibbed.Dunia.Unpack.exe". This will unpack both files and create a folder called "EXAMPLE_unpack", the 'EXAMPLE' section will match the name of the file you unpacked.

Adding to .fat and .dat files

To add to .fat and .dat files you can simply copy and paste your files in. Pay attention however to the folder structure. When modding we edit patch.fat and patch.dat but we can add files from other places like worlds.fat/.dat and common.fat/.dat. All of these files use the same folder structure so if you want to add a file you found within an unpacked common.fat/.dat under \scripts\engine\objects\pawn\ make sure you create that folder structure in patch.dat/.fat if it doesn't already exist.

Packing .fat and .dat files

1. Drag the "EXAMPLE_unpack" folder onto "Gibbed.Dunia.Pack.exe" and this will create two new files: "EXAMPLE_unpack.dat" and "EXAMPLE_unpack.fat".

Please note - the patch.fat/.dat files from the default game use compression, so you're using them your newly created patch.fat/.dat files will be significantly bigger. Once they have been unpacked and packed once they will no longer disproportionately increase in size with future edits.

2. To use these files remove the "_unpack" section of the filename and they can replace the original .fat and .dat files you had.

.fcb files

These files are also basically folders full of other files, except .fcb files always contain only .xml files. Use the tools from the 'Packing/unpacking' section above, available [HERE](#).

Unpacking .fcb files

1. Copy the .fcb file into the same folder as your modding tools.
2. Drag EXAMPLE.fcb onto "Gibbed.Dunia.ConvertBinary.exe" and this will create two things: an "EXAMPLE" folder and an "EXAMPLE.xml" file, both with the same name as the file you unpacked.

The "EXAMPLE" folder contains .xml files, notice that each .xml file starts with a number e.g. "03_...".
The "EXAMPLE.xml" file is a list of the other .xml files contained in the new folder.

Adding to .fcb files

1. To add a .xml file first copy it into the “EXAMPLE” folder.
2. Add a number to the start of the filename that places your new file at the bottom of the list.
3. Open “EXAMPLE.xml”. You can see that each .xml file in the “EXAMPLE” folder is listed in the format of “<object external="38_XXXXXX.xml" />”. Copy the last line with a filename and paste it directly below, so you have two identical lines that contain a filename.
4. Edit the filename in the line you have pasted so it matches the filename of the .xml you added into the “EXAMPLE” folder. Don’t forget to change the number as well. It should look something like this:

```
36      <object external="35_tables.xml" />
37      <object external="36_vehicle.xml" />
38      <object external="37_WeaponProperties.xml" />
39      <object external="38_weapons.xml" />
40      <object external="39_EXAMPLE.xml" />
41  </object>
```

5. Once you are finished press ‘File > Save’.

Packing .fcb files

1. Drag “EXAMPLE.xml” onto “Gibbed.Dunia.ConvertBinary.exe”. This will create a new “EXAMPLE.fcb” which will overwrite your original .fcb file.

.xml files

These are your most common files for Far Cry 2 modding and are used for almost all files controlling gameplay. They are easy to use, simply open them with Notepad++ (available [HERE](#)), make your edits, and press ‘File > Save’ when you’re done.

Decoding .xml files

Decoding is only needed when information within the game files is in hex code. This is when you see sections that look like this:

```
<object hash="BB04E184">
    <value hash="7D725133" type="BinHex">0000803F</value>
    <value hash="E49EEB82" type="BinHex">00</value>
    <value hash="DD39539B" type="BinHex">0000803F</value>
    <value hash="FB4ADD00" type="BinHex">8B6CA73F</value>
    <value hash="67872049" type="BinHex">0000003F</value>
    <value hash="5AF667C3" type="BinHex">0000003F</value>
    <value hash="1D75A72B" type="BinHex">0000003F</value>
    <value hash="F221024D" type="BinHex">00</value>
    <value hash="EAB69D7F" type="BinHex">00</value>
    <value hash="15E4D53E" type="BinHex">00</value>
    <value hash="D553AED0" type="BinHex">69726F6E7369676874667800</value>
    <value hash="C5152E83" type="BinHex">3EA563ED</value>
</object>
```

There is information hidden here which the decoder will reveal.

Be aware that you can’t copy a section of a non-decoded file into a decoded file or vice-versa. Both files need to be decoded to copy sections between them.

These are the steps:

1. Download my .xml decoder in the ‘Mod tools’ section.
2. Copy any .xml files into the “Put xml files to decode in here” folder.
3. Run “Start XML Decoder.bat”. A command prompt window will appear and show details about the files being decoded.
4. Once the window says “All XML files processed” you can copy the files back into their original location.

.rml files

These files control all of the text you see in-game. There is one for each language where all the menus, subtitles, tutorial pop-pups etc can be changed. Use the tools from the ‘Packing/unpacking’ section above, available [HERE](#).

Unpacking .rml files

1. Copy your “EXAMPLE.rml” file into the modding tools folder.
2. Drag the file onto “Gibbed.Dunia.ConvertXml.exe”. This will create a file called “EXAMPLE_converted.xml” where you can make your edits.

Packing .rml files

1. Drag “EXAMPLE_converted.xml” onto “Gibbed.Dunia.ConvertXml.exe”. This will create a file called “EXAMPLE_converted_converted.rml”.
2. Rename this file to “EXAMPLE.rml” and you can replace your original file.

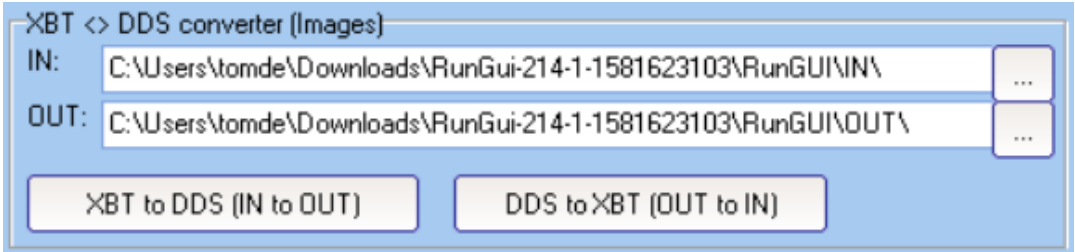
.xbt files

These are texture files. The .xbt file type is useless in itself so before working with it they need to be converted to .dds.

Converting .xbt files

1. Download “RunGUI” from the ‘Texture conversion’ section above, available [HERE](#).

- Copy your .xbt files into the “IN” folder within the “RunGUI” folder.
- Open RunGUI. A pop-up will appear asking if you want to update your Gibbed tools, press no.
- This tool has a variety of functions but I only use it for texture conversion, this section:



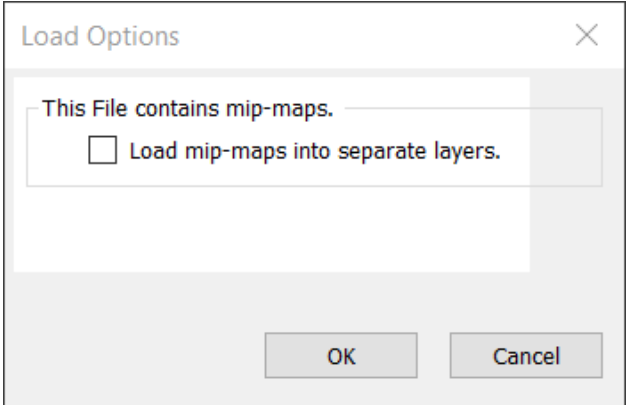
The convert function is pretty simple. Pressing the “XBT to DDS” will convert your .xbt files into .dds and put them in the “OUT” folder.

- Open your .dds image from the “OUT” folder, make your edits and save when you’re done.
- To convert back press the “DDS to XBT” button and your .dds image will be converted and put in the “IN” folder, which will overwrite your original file.

Editing .xbt files

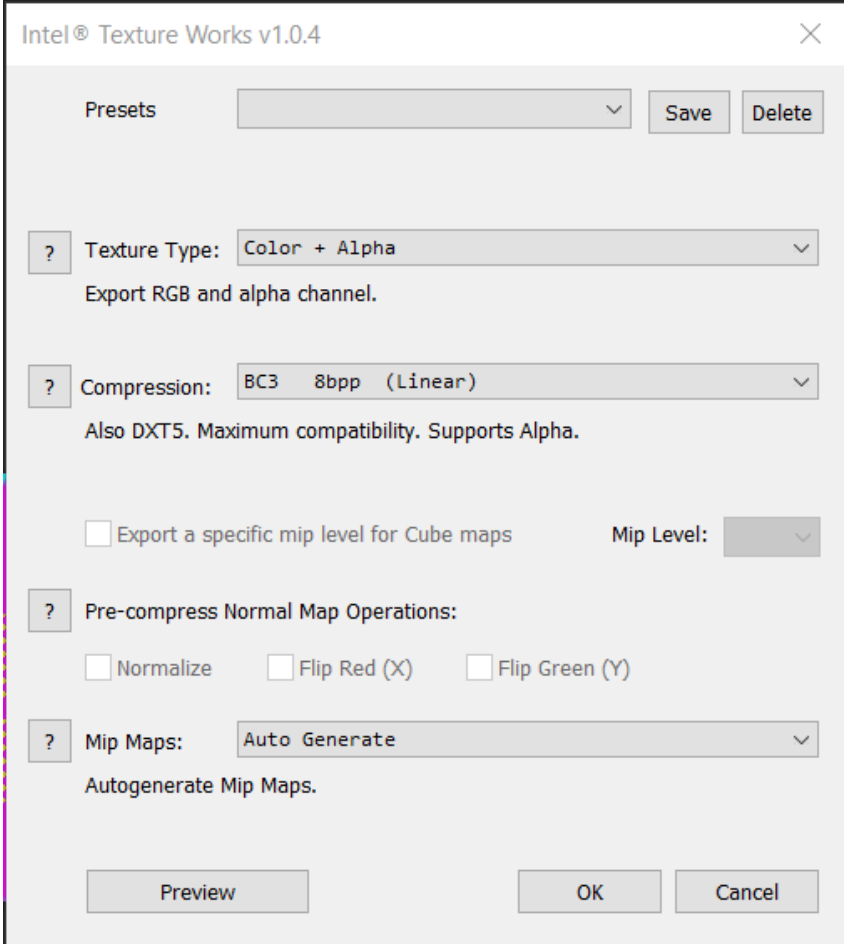
I’m going to describe doing this with Photoshop and the Intel Texture Works Plugin, available [HERE](#).

- Double clicking on your .dds should automatically open the file in Photoshop once the plugin is installed.
- This pop-up will appear before the file opens:



Don’t tick the box and press ok. The mip-maps will be auto-generated when we save.

- Make your edits and when you’re finished press File > Save.
- This pop-up will appear, you should match the settings with those I have selected:



- Once you’ve saved your file you can move it into the RunGUI “OUT” folder and carry on with the texture converting tutorial above.

.xbm files

These are material files, they control an item’s physical appearance as a mix of textures but we can’t edit them like texture files.

A hex editor can be used to get an idea of what item they are a part of. Near the top of the column to the right in your editor there will be file paths that can give you a good hint, such as in the screenshot below in a file link to the hang-glider:

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0000h:	48	53	45	4D	2A	00	06	00	38	68	C8	F3	00	00	00	00	HSEM*...8hE6....															
0010h:	00	00	00	00	A8	06	00	00	00	00	00	00	0A	00	00	00	....														
0020h:	4C	54	4D	44	01	00	00	00	57	05	00	00	43	05	00	00	LTMD....W...C...															
0030h:	00	00	00	00	00	00	00	00	00	0C	00	00	00	47	4C	49	.....GLI															
0040h:	44	45	52	5F	49	4E	54	45	4C	00	07	00	00	00	56	65	DER_INTEL....Ve															
0050h:	68	69	63	6C	65	00	06	00	00	00	2D	00	00	00	67	72	hicle.....-...gr															
0060h:	61	70	68	69	63	73	5C	76	65	68	69	63	6C	65	73	5C	aphics\vehicles\															
0070h:	61	69	72	5C	76	65	68	5F	67	6C	69	64	65	72	5C	67	air\veh_glider\g															
0080h:	6C	69	64	65	72	5F	6D	2E	78	62	74	00	0C	00	00	00	lider_m.xbt.....															
0090h:	4D	61	73	6B	54	65	78	74	75	72	65	31	00	2D	00	00	MaskTexture1.-..															
00A0h:	00	67	72	61	70	68	69	63	73	5C	76	65	68	69	63	6C	.graphics\vehicl															
00B0h:	65	73	5C	61	69	72	5C	76	65	68	5F	67	6C	69	64	65	es\air\veh_glide															
00C0h:	72	5C	67	6C	69	64	65	72	5F	6D	2E	78	62	74	00	0C	r\glider_m.xbt..															

It is possible to change the filenames of these files to swap them around and replace each other, which is how I know to use them. It is also possible to edit the texture filenames to swap textures around but I haven’t found a need to do that.

.mgb and .desc files

These files control the game menus. They can only be edited with a hex editor but they can also be swapped with each other by copying the file names.

The .mgb and .desc files come in pairs but I have found that I only needed to edit the .mgb files without touching or replacing the corresponding .desc file.

.mab files

These are animation files. They can only be edited with a hex editor but they can also be swapped with each other by copying the file names.

.lua files

These files control mission scripting. They can be editing the same as .xml files, so just open with Notepad++ and press File > Save when you’re finished.

.dll files

There is a single .dll file involved in modding, Dunia.dll. It controls lots of engine settings and can only be edited with a hex editor.

Getting Started

For Far Cry 2 modding we use the built in patch system. This allows the relatively small patch files to be easily shared online and as the patch system is already designed to overwrite the base game using those files it’s ideal for our purpose.

So, the first thing to do is unpack the patch.fat/.dat files. If you are starting from scratch these can be found in the “Data_Win32” folder within your Far Cry 2 folder. Otherwise you can use patch.fat/.dat files from any mod or those that accompany this guide.

With no extra steps at this point you can make edits to the graphics settings, textures, in-game text, mission scripting, controls and some gameplay settings. The next steps will open the rest of the game files so you can make overall edits, edits specific to each game map (North/South) and also edit the DLC.

Editing the base game

Making overall edits (across both maps)

1. Unpack “entitylibrarypatchoverride.fcb” found in \patch_unpack\generated\. This is where we will be copying our files into.
2. Unpack “entitylibrary.fcb” found in \patch_unpack\worlds\tmlpa\generated\. This contains all of the .xml files for both game maps.
3. Copy files you want to edit from the “entitylibrary” folder, into the “entitylibrarypatchoverride” folder, according to the instructions for .fcb files above.

Making edits specific to each map

The files for world 1 and 2 are included in the files accompanying this guide, otherwise they are found in the same file structure below within worlds.fat/.dat.

1. Each map has it’s own “entitylibrary.fcb” file. For map 1 (North) it is found in \patch_unpack\worlds\world1\generated\ and for map 2 (South) it is found within \patch_unpack\worlds\world2\generated\. You can unpack the “entitylibrary.fcb” files for whatever map you are editing.
2. Once you have unpacked the file you will see it contains files with the same names as those in “entitylibrarypatchoverride.fcb”. Here’s how this works: the files in the individual map files are overwritten by the files in “entitylibrarypatchoverride.fcb”, so if you want to make a change to an individual map you can edit the file within each “entitylibrary.fcb” but then you need to make sure that same file isn’t within “entitylibrarypatchoverride.fcb”.

Editing the DLC

- The files for this are already included in the files accompanying this guide, otherwise here is how to find them:
1. Unpack “entitylibrary.fat/.dat” from your Far Cry 2 folder, within \Far Cry 2\Data_Win32\downloadcontent\dlc1\.

2. Open your unpacked file and find “entitylibrary.fcb” within \downloadcontent\dlc1\generated\. Copy this file into your patch file, using the same file structure.

This “entitylibrary.fcb” file contains the files that allow us to edit the stats for the DLC vehicles and weapons. That will probably be everything you need but if you want to edit more you can also find the DLC texture/animation/sound files within the “entitylibrary.fat/dat” you unpacked.

Graphics

This section will cover editing graphics settings and how to do some texture editing.

Almost all of the graphics settings we’re going to make changes are in the file “defaultrenderconfig.xml”, found in \patch_unpack\engine\settings\.

There are three main sections to this file:

1. At the top there’s a list of general settings. Some of these are in the in-game options menu but most can only be edited here.
2. Below, under the title “<RenderQuality>” it lists the different graphics quality presets (Ultra High, Ultra High w/ DX10, Very High, Very High w/ DX10, High, High w/ DX10, Medium, Low) and what individual graphics setting presets (e.g. Textures - Ultra High) are included in them.
3. Further down is a long list of the different graphics settings, most of which are under the same names shown in the in-game options menu: Vegetation, Water (shown in-game as ‘Shading’), Terrain, Geometry, Post, Textures, Shadow and Ambient. When making changes to these note that each has sections for their different presets (Ultra High, Very High etc) so your changes will only apply when you choose the preset where you made them.

You can explore this file and see there’s a lot you can tweak. I’m going to go over everything I used in my modding and some other settings that seem significant. If you do try doing other tweaks I would advise you to take it slow and test your changes, it’s really easy to introduce bugs and not know which setting is causing them.

LOD and Draw Distance

LOD distance

defaultrenderconfig.xml - \patch_unpack\engine\settings\

These are within the Geometry settings. The lower the values, the further the distance, so ‘0’ is the max.

“KillLodScale” can be set to 0.7 with a minimal performance hit but when setting it any lower I had trees and bushes flashing in and out of existence in map 2.

“LodScale” I don’t advise changing but it’s up to your preference. A lower value increases the lod pop-in distance for almost everything but for some reason decreases the lod pop-in distance for roads. This sucks as while 99% of the game looks way better with this set to 0 the roads look really bad and buggy.

KillLodScale="1.0"
LodScale="1.0"

LOD distance - Terrain

defaultrenderconfig.xml - \patch_unpack\engine\settings\

This is within the Terrain settings. It can be increased to 128 with a small performance hit.

TerrainDetailBlendViewDistance="128"

Draw distance - Trees

defaultrenderconfig.xml - \patch_unpack\engine\settings\

This is within the Geometry settings. The lower the value, the further the distance, so ‘0’ is the max. You can easily set this to the max with only a small performance hit.

RealTreesLodScale="1.0"

Draw distance - Clusters

defaultrenderconfig.xml - \patch_unpack\engine\settings\

This is within the Geometry settings. The lower the value, the further the distance, so ‘0’ is the max. This setting is very performance heavy but max isn’t too difficult for a recent graphics card.

Clusters are subtle parts of the environmental like rocks and other small details.

ClustersLodScale="0.8"

Shadows

Dynamic shadows - Softness, ‘filter line’ and distance

defaultrenderconfig.xml - \patch_unpack\engine\settings\

These are within the Shadow settings. How they work is complex and I don’t understand it but I’ll share what I know. The only setting that significantly affects performance here is “SunShadowRange2”.

Increasing “SunShadowRange0” will make the shadows softer and push back the obvious ‘filter line’ where high quality shadows become low quality. You can fiddle around with this to your preference but I suggest setting “SunShadowRange0” to 20.

“SunShadowRange2” controls the max distance shadows will appear and although it is tempting to increase this that will cause a bug where shadows on trees bug out and flicker black. I have seen this bug even on the default setting of 140 so I personally set “SunShadowRange2” to 135 and I haven’t seen this bug since, you won’t notice a visual difference between 140 and 135. There is another bug where distant shadows flash black when they first appear which can be fixed by setting “SunShadowRange2” to 100, there is a visual difference with this though and the bug is quite subtle so that’s up to you.

I don’t see a big difference with “SunShadowRange1”, I set it to 40.

I also don’t see a difference with “SunShadowFadeRange” but others have recommended setting this to 12.

SunShadowFadeRange="10"
SunShadowRange0="4"
SunShadowRange1="20"
SunShadowRange2="140"

Dynamic shadows - Vegetation

defaultrenderconfig.xml - \patch_unpack\engine\settings\

This is within the Shadow settings. It can be easily increased to 1 so that vegetation casts more shadows.

LeavesShadowRatio="0.5f"

Dynamic shadows - Resolution

defaultrenderconfig.xml - \patch_unpack\engine\settings\

These are within the Shadow settings. They can be increased to 2560 without a huge performance hit.

ShadowMapSize="2048"
CascadedShadowMapSize="2048"

Static shadows - Distance

defaultrenderconfig.xml - \patch_unpack\engine\settings\

This is within the Ambient settings. It can be easily increased to 512 with a small performance hit. There’s no point increasing this higher as the map won’t load much further so it won’t need shadows.

MaxHemiMapDistance="160"

Decals

Decals - Max number

defaultrenderconfig.xml - \patch_unpack\engine\settings\

This is within the Geometry settings. This setting can be increased easily, the default setting has a 1:4 ratio between max per decal count and overall max, so this is worth maintaining.

MaxDecalCount="200"
MaxDecalCountPerType="50"

Decals - Lifetime

decal.xml - \patch_unpack\databases\generic\

These are within a different file to the other graphics settings, make your edits to “decal.xml” found in \patch_unpack\databases\generic\. Open the file and you’ll see the different base materials and decal types. The lifetime and fade out time of each can be increased to your preference. You should note though that increasing the lifetime of decals on flesh (Base.Flesh) includes when the player receives damage, so can lead to bugs where the marks where you were hit remain floating in your view.

fLifeTime="1"
fFadeOutDuration="0.3"

Texture editing

Full disclosure before I start this section - I don't really know what I'm doing and I'm no graphic designer. I'll only be able to share some tips that helped me do minor retextures.

A general principle to be aware of is that you can save texture files in sizes larger than the original files and they will display correctly if they are in the same aspect ratio. This is useful if you want your additions to appear in higher resolution.

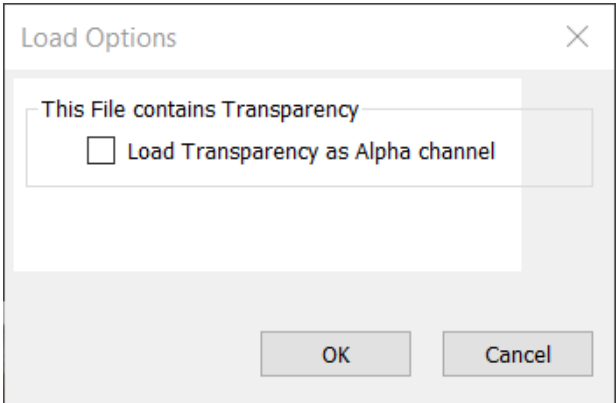
I'm not going to include the files for my examples below but I will list where they can be found.

Watermarks

```
logo_new_01.xbt/logo_new_02.xbt - \ui\textures\common\ > common.fat/.dat
```

These files are those typically used for mod watermarks but you can find the other main menu textures in the same folder, so feel free to be creative!

When you open this file, you'll see this pop-up. Don't tick the box as you don't need the transparency in a separate channel:



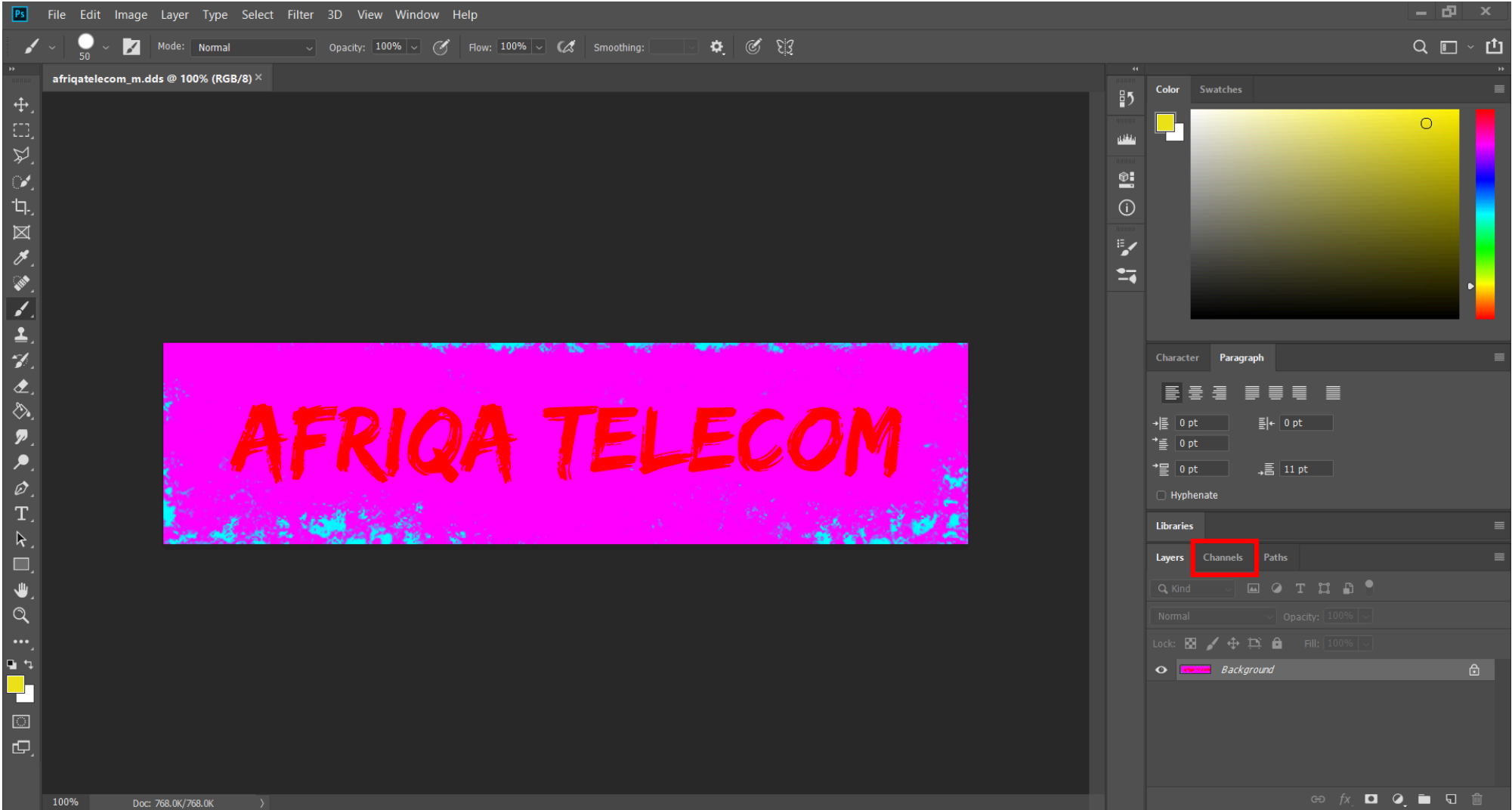
Once your file is open there isn't much more to say. You find the Far Cry font [HERE](#) if you want to use it but you can add whatever you like and then just save, convert and put it into your patch in the right folder.

Road signs

```
afriqatelecom_m.xbt - \graphics\objects\_signskit\ > worlds.fat/.dat
```

The use of afriqatelecom_m.xbt is an example, you can find the rest of the road sign files in the same folder.

When you open these files you're going to notice that it looks a bit pink. To see what's going on go into the 'Channels' tab that I've highlighted in this image:



The file has separate red, green and blue channels and the red and green channels are used solely for the dirt effect. The actual sign text is contained in the blue channel, as you can see in the image below where only the blue channel is enabled:



Working only with the blue channel is limited and some of Photoshop’s functions won’t work, so I recommend creating a separate file of the same size that you can do your work in and then copy it over.

The use of certain channels for the dirt effect is used in other texture files also so be aware of it!

Other visual tweaks

Max FPS

Option 1: Add a launch property

Right click your Far Cry 2 shortcut and press properties, either in Steam if using that or the actual shortcut itself.

In Steam you can add “-RenderProfile_MaxFps 60” as a launch option, for regular windows add it at the end of the “Target” section.

-RenderProfile_MaxFps 60

Option 2: Edit the game files

defaultrenderconfig.xml - \patch_unpack\engine\settings\

The default setting for this is an unlocked framerate (9999), I advise setting this to 60 for stability. I would only set it higher to match the refresh rate of your monitor but there may still be bugs.

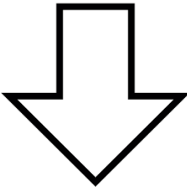
MaxFPS=“9999”

No blinking items

Dunia.dll - \Far Cry 2\bin\

1. Open “Dunia.dll” with your hex editor.
2. Search the file for “Mesh_Highlight” or the hex bytes “4D 65 73 68 5F 48 69 67 68 6C 69 67 68 74”. There’s only one instance of this.
3. We’re going to remove “Mesh_Highlight” by entering 00 over all of the hex bytes. Put your zeroes in the hex section to the left, don’t put them in the section to the right. It should look like this:

E4:88F0h:	48 44 52 00	53 50 45 43	49 41 4C 50	49 43 4B 55	HDR.SPECIALPICKU
E4:8900h:	50 00 00 00	4D 65 73 68	5F 48 69 67	68 6C 69 67	P...Mesh_Highlig
E4:8910h:	68 74 00 00	00 00 80 3F	00 00 80 BF	00 00 00 00	ht....€?...€¿....
E4:8920h:	00 00 80 3F	00 00 00 20	00 00 00 40	00 00 00 80	..€?... ...@...€



E4:88F0h:	48 44 52 00	53 50 45 43	49 41 4C 50	49 43 4B 55	HDR.SPECIALPICKU
E4:8900h:	50 00 00 00	00 00 00 00	00 00 00 00	00 00 00 00	P...
E4:8910h:	00 00 00 00	00 00 80 3F	00 00 80 BF	00 00 00 00€?...€¿....
E4:8920h:	00 00 80 3F	00 00 00 20	00 00 00 40	00 00 00 80	..€?... ...@...€

FOV

xx_cameras.xml - entitylibrarypatchoverride.fcb > \patch_unpack\generated\

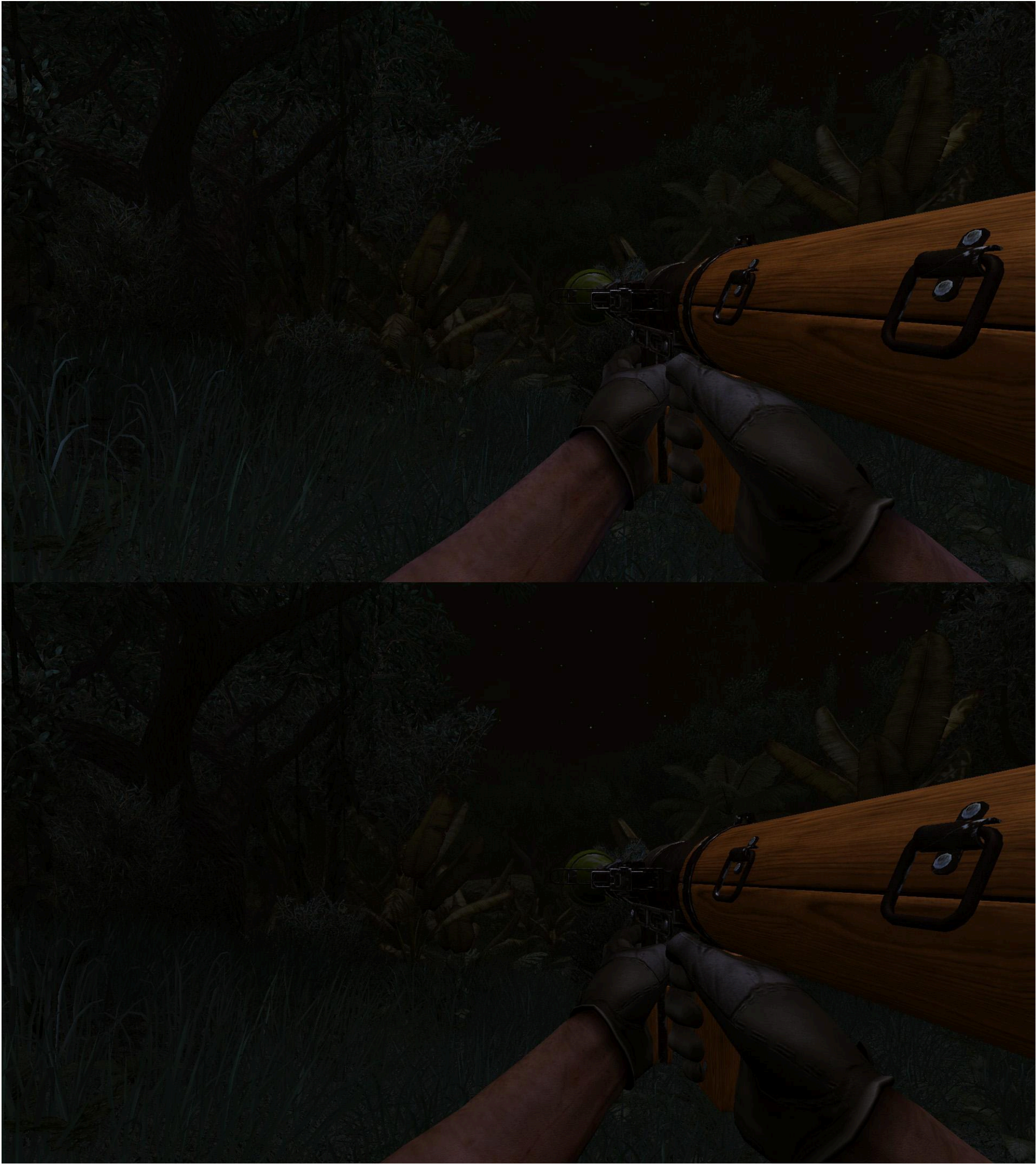
Find the right section of this file by searching for “Camera.First”, the value to change within this section is “fFOV”. Note that going above the default fov causes visual bugs for some of the playable characters. Edges of the body you aren’t meant to see will be visible while sprinting and jumping.

```
<object hash="256A1FF9">
  <value name="Name" type="String">Camera.First</value>
  <object type="Entity">
    <value name="hidName" type="String">cameras.Camera.First</value>
    <value name="disEntityId" type="UInt64">118</value>
    <value hash="D2B3429E" type="String">CEntity</value>
    <value name="hidEntityClass" type="Hash">50C95067</value>
    <value name="hidResourceCount" type="UInt32">0</value>
    <value name="hidPos" type="Vector3">
      <x>0</x>
      <y>0</y>
      <z>0</z>
    </value>
    <value name="hidAngles" type="Vector3">
      <x>0</x>
      <y>0</y>
      <z>0</z>
    </value>
    <value name="hidPos_precise" type="Vector3">
      <x>0</x>
      <y>0</y>
      <z>0</z>
    </value>
    <value name="hidConstEntity" type="Bool">False</value>
  </object>
  <object type="Components">
    <object type="CCameraPawnComponent">
      <value name="hidHasAliasName" type="Bool">False</value>
      <value name="fCameraBlendTime" type="Float">0.5</value>
      <value name="fNearDistance" type="Float">0.1</value>
      <value name="fFarDistance" type="Float">1000</value>
      <value name="fFOV" type="Float">75</value>
      <value hash="920A6E7C" type="String">Camera</value>
      <value name="Bone" type="Hash">3CB0EB33</value>
      <value name="DebugOffset" type="Vector3">
```

Guide - Removing rim lighting (blue tint at night)

This guide will cover how to remove rim lighting, which is extra blue light spread across scenes at night. This is an attempt at realism but the blue can look unnatural, especially when the player’s arms look so blue they must be either very short on blood or an alien.

Rim lighting is quite a subtle effect until you’ve had it pointed out, and I’ve created the image below to compare. The top picture is the default game, and the bottom picture is with rim lighting removed. Notice the slight extra brightness and blue tinge to both the player and surrounding vegetation in the default game’s night.



If you can't see any difference then I would encourage you to do some testing of your own during actual gameplay and see if you prefer the image with or without rim lighting.

To remove rim lighting we are going to make the same changes to two different files:

world1.managers.xml < world1.managers.fcb (\patch_unpack\worlds\world1\generated)

world2.managers.xml < world2.managers.fcb (\patch_unpack\worlds\world2\generated)

Do not decode the files! For some reason they can't be converted back to .fcb files once they've been decoded. We're going to make our changes to the BinHex values as they are.

There are multiple sections in both of these files with the title "<object hash='777FE977'>". Below these lines are sections of BinHex values, they look like this:

```
<object hash="777FE977">
  <value hash="AECEF355" type="BinHex">08000000</value>
  <object hash="F32C0E1C">
    <object hash="9A152447">
      <value hash="DCB67730" type="BinHex">ED0DBE3B3B014D3E0000003F00000000</value>
      <value hash="6BBB9E69" type="BinHex">0000803F0000803F0000000000000000</value>
```


There are loads of sections like this in both files, some longer than others but the process is always the same.

Bug fix - White flashes on distant terrain with low settings

defaultrenderconfig.xml - \patch_unpack\engine\settings\

This bug occurs when playing with the “Terrain” setting on low or medium. When a new area is loaded there are white flashes on the terrain.

To fix this, the “TerrainDetailViewDistance” setting should have a minimum value of 256 and “TerrainDetailBlendViewDistance” should have a minimum value of 64.

There is a small performance impact with this edit.

```
TerrainLodScale="1.7"
TerrainDetailViewDistance="256"
TerrainDetailBlendViewDistance="64"
TerrainComputeMaxErrorLODs="1"
TerrainAffectedByMuzzleFlash="0"
TerrainMaxErrorTolerance="0.03f"
```

Bug fix - White flashes on vehicles with low settings

defaultrenderconfig.xml - \patch_unpack\engine\settings\

This bug occurs when playing using low shading settings. Vehicles will flash white.

To fix this HDR and Bloom need to be enabled in the graphics settings. The low and medium quality settings do not have both HDR and Bloom enabled, so they can be edited to include them.

```
<quality id="low"
  ResolutionX="800"
  ResolutionY="600"
  ShaderModel="30"

  AntiPortalQuality="high"
  Hdr="1"
  HdrFP32="0"
  Bloom="1"
  PostFxQuality="low"

  TextureResolutionQuality="low"

  WaterQuality="low"
  TextureQuality="low"
  EnvironmentQuality="low"

  GeometryQuality="low"
  TerrainQuality="low"
  AmbientQuality="low"
  ShadowQuality="off"
  DepthPassQuality="low"
  VegetationQuality="low"
```

Bug fix - Edges of distant shadows flickering

defaultrenderconfig.xml - \patch_unpack\engine\settings\

This is a very rare bug with default settings, it is more commonly seen in mods that increase max shadow distance (New Dunia).

Max shadow distance is controlled by the “SunShadowRange2” stat in the “Shadow” section.

The default value for the ultra high shadow setting is 140 and increasing it at all will cause almost all distant shadows to flicker. I’ve also seen this on default settings and fixed it by reducing the value to 135. I haven’t seen it since and notice no other difference in image quality.

```
<quality id="ultrahigh"
  SunShadowFadeRange="10"
  SunShadowRange0="4"
  SunShadowRange1="20"
  SunShadowRange2="135"
  ShadowMapSize="2048"
```

Bug fix - Black flashes on distant shadows

defaultrenderconfig.xml - \patch_unpack\engine\settings\

This is a bug where distant shadows will flash black when they first appear, so when the player enters a new area.

It can be fixed by reducing the max shadow distance but I found it required reducing the “SunShadowRange2” value to 100. This means there are no shadows beyond 100m which is noticeable when looking into the distance.

You’ll have to decide for yourself if you even notice the flashes in the first place, it is quite subtle.

```
<quality id="ultrahigh"
  SunShadowFadeRange="10"
  SunShadowRange0="4"
  SunShadowRange1="20"
  SunShadowRange2="100"
  ShadowMapSize="2048"
```

UI/HUD

In-game text

\patch_pack\languages\ - Each language has its own folder and “oasisstrings.rml” file

It’s possible to change the in-game text for each language independently. This includes all text: menus, tutorials, subtitles, weapon names, vehicle names etc.

The instructions for handling the files are in the “File Management” section.

Here are my tips:

- 1. When you open it you’ll see that the subtitles are numbered and everything else has a description.
- 2. If you change the name of something make sure you Ctrl-F for every use of the old name. They can be used for a few different things.
- 3. It’s possible to add entries to this file, just make sure your new entry is in the correct section (e.g. menu items go with the others).

Weapon images

Each weapon image file has a relevant hex string and these are linked to the ui weapon files which are found in your common.fat/.dat files (\common_unpack\ui\textures\hud\icons_weapons\). These hex strings are listed below, in brackets I have included extra values that are only needed when editing the convoy reward popups. I wasn’t able to find the bracketed values for every weapon image, I don’t know how essential they are so you’ll need to do your own experimentation if you want to use them.

Makarov - 72 A5 F8 24 (1F)
Silenced Makarov - 44 C2 75 53 (1B)
Star .45 - 5E 97 08 17 (1E)
Eagle .50 - BC 19 47 CE (1A)

Mac 10 - 71 95 5D 26 (1D)
Uzi - 8B 2E 0E B3 (1B)

Ithaca - BE 5F 29 D6
Spas 12 - 8F DF A1 99 (1E)
USAS 12 - 76 E7 24 AB (1E)
Silenced Shotgun - CC 5E 7E 2D
Sawed-off Shotgun - 46 76 30 4F

G3KA4 - 4A CF 24 D2
AK47 - 30 10 68 48 (1C)
FAL - B7 0C 32 74
M16 - 82 02 88 E7
MP5 - B3 CB 99 C7 (1B)

M1903 - 4A 7E A8 CD
Dragunov - 19 63 FC B5 (20)
AS50 - 1A 46 22 DD (1C)
Dart Rifle - 45 48 B7 D2 (21)

PKM - 69 0B 71 E1 (1B)
M249 SAW - 50 D1 26 BE (1C)

M79 - 75 FE 20 19 (1B)
MGL 140 - 0F BF A3 2C (1D)
RPG - E5 8E A5 1E (1C)
Carl G - A3 8E 25 0C (22)
Crossbow - EF 1C B9 5B
Mortar - 07 4E 49 C9 (1E)
Flamethrower - 81 76 50 C7 (1D)
IED - 16 C9 1E 41
Flare Gun - 2D 5C 4F 4E

M67 - D3 A4 CE DF
Molotov - 93 13 80 48

Machete - 88 9E 61 5D

Syrette - 29 4C 97 79
Bullets - 3B 1B 88 CA

Tutorial images

hud.mgb (\patch_unpack\ui\)
There are different folders for widescreen/non-widescreen aspect ratios and the different languages, it’s pretty self-explanatory when you see it.

In the tutorial each weapon type (primray, secondary, special, machete) has its own section with a few example weapons. Similarly, within “hud.mgb” each weapon type has its own section with its own title. To edit the tutorial weapons you must only change the weapon hex strings directly under these titles. This is relevant because when you Ctrl-F the values each weapon can show up multiple times.

These are the titles and their hex codes:

Machete
T.U.T.O.R.I.A.L._.W.E.A.P.O.N._.M.A.C.H.E.T.E
54 00 55 00 54 00 4F 00 52 00 49 00 41 00 4C 00
5F 00 57 00 45 00 41 00 50 00 4F 00 4E 00 5F 00
4D 00 41 00 43 00 48 00 45 00 54 00 45

Primary weapons
TU.T.O.R.I.A.L._.W.E.A.P.O.N._.P.R.I.M.A.R.Y._.3
54 00 55 00 54 00 4F 00 52 00 49 00 41 00 4C 00
5F 00 57 00 45 00 41 00 50 00 4F 00 4E 00 5F 00
50 00 52 00 49 00 4D 00 41 00 52 00 59 00 5F 00
33

Secondary weapons
T.U.T.O.R.I.A.L._.W.E.A.P.O.N._.S.E.C.O.N.D.A.R.Y._.3
54 00 55 00 54 00 4F 00 52 00 49 00 41 00 4C 00
5F 00 57 00 45 00 41 00 50 00 4F 00 4E 00 5F 00
53 00 45 00 43 00 4F 00 4E 00 44 00 41 00 52 00
59 00 5F 00 33

Special weapons
T.U.T.O.R.I.A.L._.W.E.A.P.O.N._.S.P.E.C.I.A.L._.4
54 00 55 00 54 00 4F 00 52 00 49 00 41 00 4C 00
5F 00 57 00 45 00 41 00 50 00 4F 00 4E 00 5F 00
53 00 50 00 45 00 43 00 49 00 41 00 4C 00 5F 00
34

Within these sections you can ctrl-f the weapons you want to swap and replace their hex strings with the ones i have listed about. For reference the default tutorial screen looks like this:



Convoy mission reward images

hud.mgb (\patch_unpack\ui\)
There are different folders for widescreen/non-widescreen aspect ratios and the different languages, it’s pretty self-explanatory when you see it.

There are 8 total reward screens for the different convoys but unfortunately they aren’t numbered within this file. To navigate each convoy entry they each have a reference to “TU70A message” (54 00 55 00 37 00 30 00 41) and the weapons for each convoy are listed below this. It is possible to navigate between each weapon by searching for “W.E.A.P.O.N.B.A.Z.A.A.R” (57 00 45 00 41 00 50 00 4F 00 4E 00 42 00 41 00 5A 00 41 00 41 00 52) but as you will see it will be useful to be able to navigate each convoy also.

The structure for each convoy is the same throughout. There is a lot of other hex between the listed sections but this is the order they appear as you go further down the file:

- 1) T.U.7.0.A._.M.E.S.S.A.G.E
- 2) Hex strings for the relevant weapon images
- 3) Sections for each weapon rewarded by the convoy mission

To edit the images there are three things to edit:

- 1) The hex string for the relevant weapon. The same that are listed above for every weapon.
- 2) Each weapon section has a title that looks like this: W.E.A.P.O.N.B.A.Z.A.A.R._.U.Z.I._.C.R.A.T.E
This title needs to be changed to the new weapon.
- 3) Directly before the title for each weapon there is a value that needs to be changed. This is always four hex values before the title. I have listed these above in brackets for each weapon for those I could find it for.

Once all three of these have been changed for the new weapon the image will be updated in game.

For reference these are the convoy rewards:

Rewards			
Act I			
1st Mission	2nd Mission	3rd Mission	4th Mission
Star .45 Silent Makarov 6P9 Flare Pistol	MAC-10 AK-47 RPG-7	Silent MP-5 SPAS-12 LPO-50 Flamethrower	M-79 SVD Dart Rifle
Act II			
At the beginning of Act 2, all the weapons from Act I are unlocked automatically, so there is no need to do any of the missions in Act I.			
1st Mission	2nd Mission	3rd Mission	4th Mission
AS50 M-249 SAW	AR-16 Type 63 Mortar	USAS-12 Carl G Rocket Launcher	MGL-140

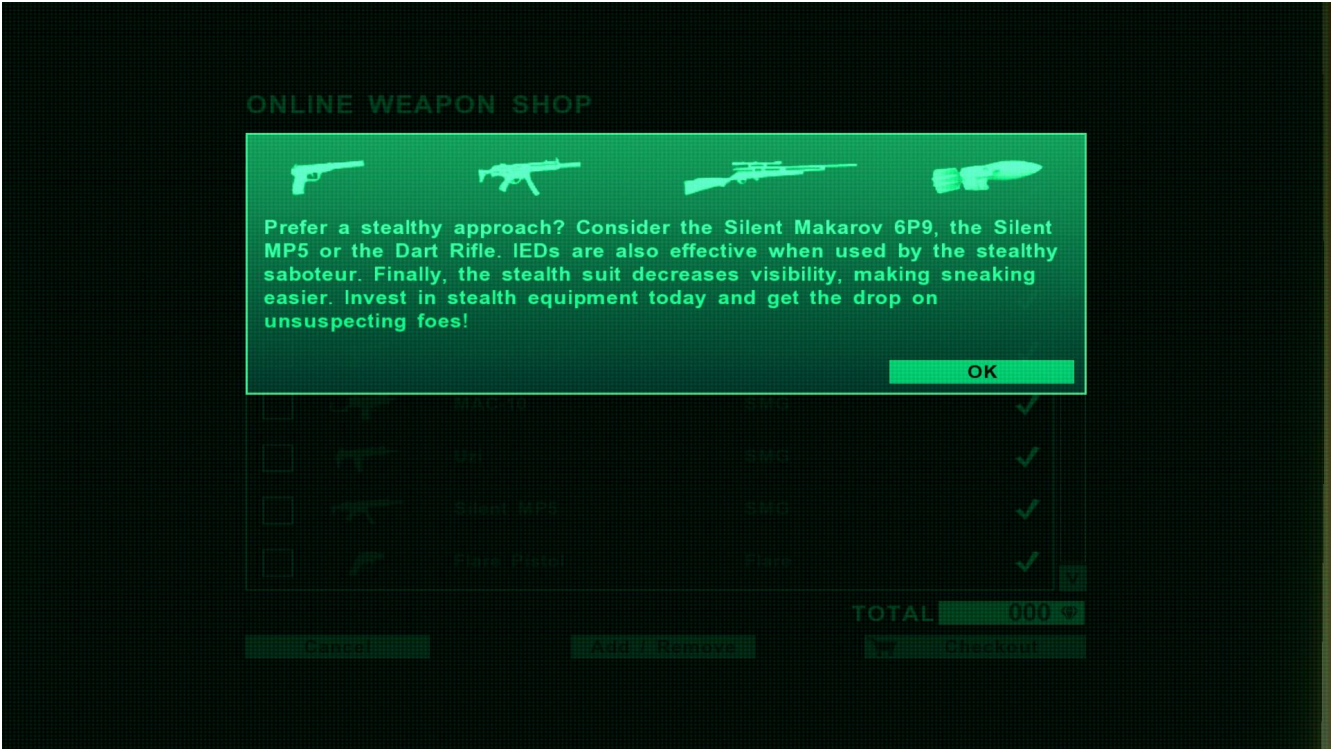
Weapon shop advert images

weapon_bazaar.mgb (\patch_unpack\ui\)
There are different folders for widescreen/non-widescreen aspect ratios and the different languages, it's pretty self-explanatory when you see it.

For these images you can simply swap out the hex strings with those listed above. Each advert has a title at the end of it's section and it looks like this, with the number directly after: C.O.M.P.U.T.E.R._.A.D.V.E.R.T (43 00 4F 00 4D 00 50 00 55 00 54 00 45 00 52 00 5F 00 41 00 44 00 56 00 45 00 52 00 54). There are nine adverts, not all of them show weapons and there are a few weapons that appear multiple times.

These are the different adverts:

Computer advert 1







Computer advert 2







Computer advert 3

ONLINE WEAPON SHOP



Like big explosions? The RPG-7 Rocket Launcher and the CG-Guided Missile System are perfect anti-vehicular weapons. IEDs and the M79 Grenade Launcher give you explosive power in place of a standard sidearm. The MGL-140 is a primary weapon that packs more explosive bang for your buck than any other weapon available.

OK

<input type="checkbox"/>		MGL-140	SMG	<input checked="" type="checkbox"/>
<input type="checkbox"/>		M79	SMG	<input checked="" type="checkbox"/>
<input type="checkbox"/>		Silent MP5	SMG	<input checked="" type="checkbox"/>
<input type="checkbox"/>		Flare Pistol	Flare	<input checked="" type="checkbox"/>

TOTAL 000





Cancel

Add/Remove

Checkout





Computer advert 4

ONLINE WEAPON SHOP



Attacking from range can decide a battle before it begins. Use sniper rifles to wound and pick off stragglers – but remember to relocate frequently. For long-range punch, invest in the Mortar... it's difficult to master, but shelling a camp from range is the best way to soften it before an assault.

OK

<input type="checkbox"/>		MGL-140	SMG	<input checked="" type="checkbox"/>
<input type="checkbox"/>		M79	SMG	<input checked="" type="checkbox"/>
<input type="checkbox"/>		Silent MP5	SMG	<input checked="" type="checkbox"/>
<input type="checkbox"/>		Flare Pistol	Flare	<input checked="" type="checkbox"/>

TOTAL 000





Cancel

Add/Remove

Checkout





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ONLINE WEAPON SHOP



Use the environment against the enemy. Flamethrowers and Molotovs are obvious choices for the budding pyromaniac, but explosions and rocket back-blast can also start fires. A flare pistol is not only incendiary, but can also be used to call enemy reinforcements to add some chaos into the mix.

OK

<input type="checkbox"/>		MGL-140	SMG	<input checked="" type="checkbox"/>
<input type="checkbox"/>		M79	SMG	<input checked="" type="checkbox"/>
<input type="checkbox"/>		Silent MP5	SMG	<input checked="" type="checkbox"/>
<input type="checkbox"/>		Flare Pistol	Flare	<input checked="" type="checkbox"/>

TOTAL 000

Cancel

Add/Remove

Checkout

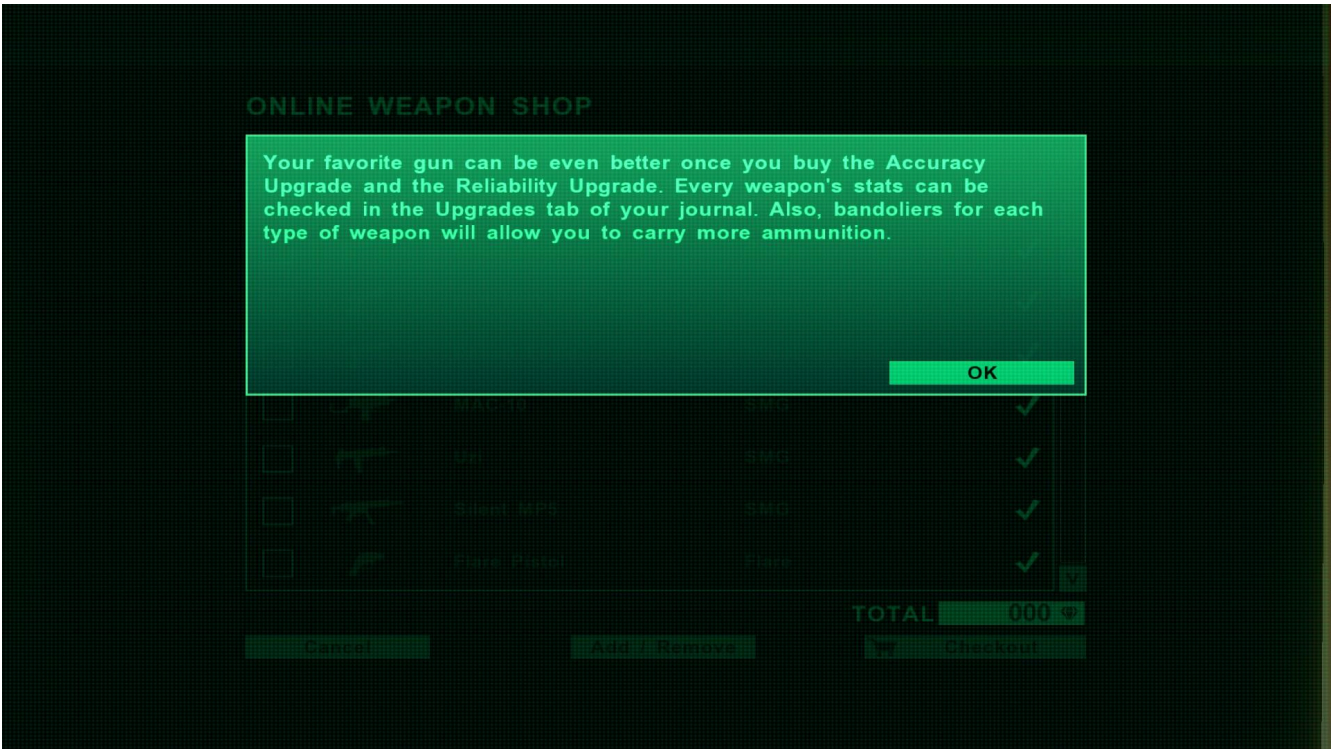
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ONLINE WEAPON SHOP

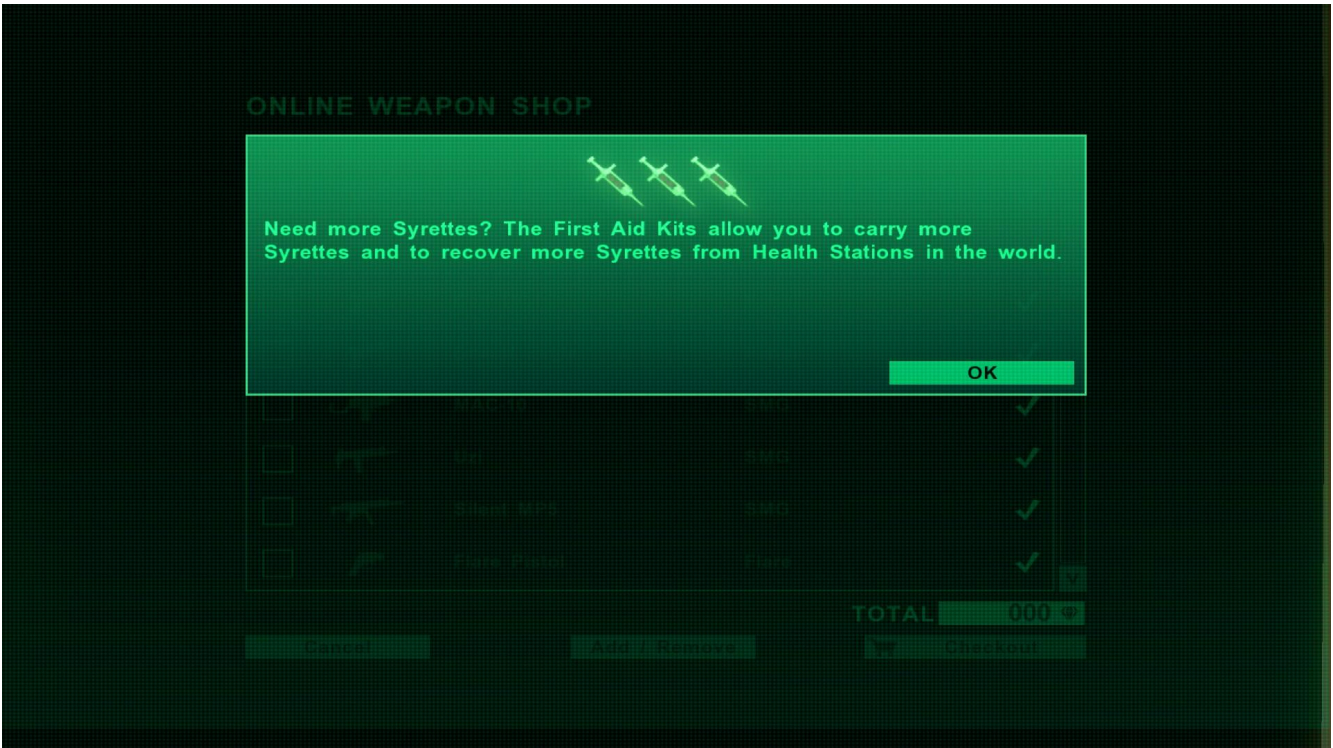
Shoddy enemy weapons getting you down? Buying weapons provides an unlimited supply of new ones at the Armoury next door. New weapons have less recoil and jam less frequently. To further improve reliability, buy Reliability Upgrades for each weapon. Repair Upgrades are also available for vehicles, speeding and improving repairs.

OK

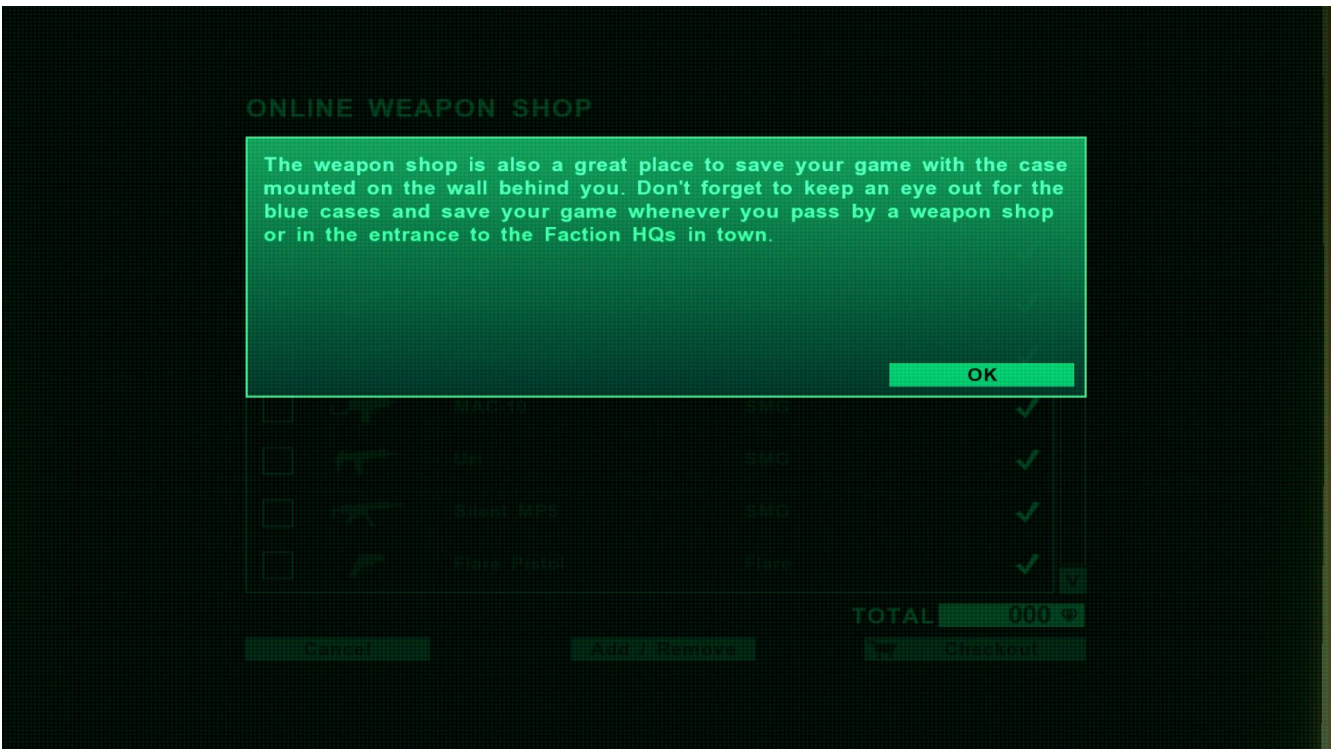
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HUD fade time

gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)

HUD fade time is controlled by the “fadeOutDelay” stat in the line that starts with “UI name=“CFCXMainHudUI”.

It is a countdown measured in seconds, with a default value of 3.

```
<UI name="CFCXMainHudUI" class="CFCXMainHudUI" fadeOutDelay="3.0" reloadPromptAmmoRatio="0.25" maxRockets="4" />
```

Reload prompt

```
gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)
```

The reload prompt is controlled by the “reloadPromptAmmoRatio” stat in the line that starts with “UI name=“CFCXMainHudUI”.

It is a proportional value which describes the amount of ammo left in a weapon’s magazine, so the default value of 0.25 means the reload prompt appears when there is 25% or less of a magazine remaining.

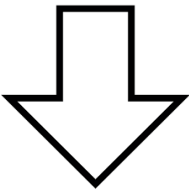
```
<UI name="CFCXMainHudUI" class="CFCXMainHudUI" fadeOutDelay="3.0" reloadPromptAmmoRatio="0.25" maxRockets="4" />
```

Removing the flashing save reminder from map/GPS safehouse icons

```
Dunia.dll (\Far Cry 2\bin\)
```

- 1. Open Dunia.dll in your hex editor.
- 2. For the GPS safehouse icon search for “gadgets.ObjectiveIcons.SaveDiskGPS” or the hex bytes “67 61 64 67 65 74 73 2E 4F 62 6A 65 63 74 69 76 65 49 63 6F 6E 73 2E 53 61 76 65 44 69 73 6B 47 50 53”. There’s only one instance of this.
- 3. Directly below this there is “gadgets.ObjectiveIcons.SaveDisk” or the hex bytes “67 61 64 67 65 74 73 2E 4F 62 6A 65 63 74 69 76 65 49 63 6F 6E 73 2E 53 61 76 65 44 69 73 6B”.
- 4. We’re going to remove either one of “gadgets.ObjectiveIcons.SaveDiskGPS” or “gadgets.ObjectiveIcons.SaveDisk” or both by entering 00 over all of the hex bytes. Put your zeroes in the hex section to the left, don’t put them in the section to the right. If removing both it should look like this:

E9:1F60h:	5F 4C 6F 63	6B 65 64 5F	47 50 53 00	A6 9B C4 3A	_Locked_GPS. | »Ã:
E9:1F70h:	67 61 64 67	65 74 73 2E	4F 62 6A 65	63 74 69 76	gadgets.Objectiv
E9:1F80h:	65 49 63 6F	6E 73 2E 53	61 76 65 44	69 73 6B 47	eIcons.SaveDiskG
E9:1F90h:	50 53 00 00	67 61 64 67	65 74 73 2E	4F 62 6A 65	PS..gadgets.Obje
E9:1FA0h:	63 74 69 76	65 49 63 6F	6E 73 2E 53	61 76 65 44	ctiveIcons.SaveD
E9:1FB0h:	69 73 6B 00	00 00 00 3F	A0 95 69 10	20 04 31 10	isk.....? •i. .1.
E9:1FC0h:	A0 D3 03 10	E0 FC 03 10	D0 32 5A 10	D0 7C 65 10	ó..àü..Ð2Z.Ð|e.



E9:1F60h:	5F 4C 6F 63	6B 65 64 5F	47 50 53 00	A6 9B C4 3A	_Locked_GPS. | »Ã:
E9:1F70h:	00 00 00 00	00 00 00 00	00 00 00 00	00 00 00 00	.....
E9:1F80h:	00 00 00 00	00 00 00 00	00 00 00 00	00 00 00 00	.....
E9:1F90h:	00 00 00 00	00 00 00 00	00 00 00 00	00 00 00 00	.....
E9:1FA0h:	00 00 00 00	00 00 00 00	00 00 00 00	00 00 00 00	.....
E9:1FB0h:	00 00 00 00	00 00 00 3F	A0 95 69 10	20 04 31 10	.....? •i. .1.
E9:1FC0h:	A0 D3 03 10	E0 FC 03 10	D0 32 5A 10	D0 7C 65 10	ó..àü..Ð2Z.Ð e.

Limited navigation

Removing markers from the map/gps

```
xx_gadgets.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
```

Each item shown on the map, GPS and vehicle GPS has a separate entry in this file. You can remove as many as you prefer, for a comprehensive limited navigation feature I suggest removing the following:

Map icons:

- gadgets.ObjectiveIcons.GuardPost_Locked
- gadgets.ObjectiveIcons.MissionArrow
- gadgets.ObjectiveIcons.PlayerPosition
- gadgets.ObjectiveIcons.SubvertArrow
- gadgets.ObjectiveIcons.UnderGroundArrow

GPS/Vehicle GPS icons:

- gadgets.ObjectiveIcons.CompassObjective
- gadgets.ObjectiveIcons.CompassObjective_VEH
- gadgets.ObjectiveIcons.CompassSubvertAnte
- gadgets.ObjectiveIcons.CompassSubvertAnte_VEH
- gadgets.ObjectiveIcons.CompassUndergroundObjective
- gadgets.ObjectiveIcons.CompassUndergroundObjective_VEH
- gadgets.ObjectiveIcons.MissionArrowGPS

gadgets.ObjectiveIcons.MissionArrowGPS_VEH
gadgets.ObjectiveIcons.PartnerMissionObjective_GPS
gadgets.ObjectiveIcons.PartnerMissionObjective_GPS_VEH
gadgets.ObjectiveIcons.SafeHouse_Locked_GPS
gadgets.ObjectiveIcons.SafeHouse_Locked_GPS_VEH
gadgets.ObjectiveIcons.SafeHouse_Unlocked_GPS
gadgets.ObjectiveIcons.SafeHouse_Unlocked_GPS_VEH
gadgets.ObjectiveIcons.SubvertArrowGPS
gadgets.ObjectiveIcons.SubvertArrowGPS_VEH
gadgets.ObjectiveIcons.UnderGroundArrowGPS
gadgets.ObjectiveIcons.UnderGroundArrowGPS_VEH

To disable these you need to remove the small section of each that starts with “<object type="object">”:

```
<object type="object">
  <value name="hidIndex" type="UInt32">0</value>
  <value hash="BF9B3A5C" type="String">graphics\objects\mapcompass\icon_playerpos.xbg</value>
  <value name="objModel" type="Hash">4311B3CD</value>
  <value name="hidMeshName" type="String"></value>
  <value hash="E1A0EE56" type="String">Icon_PlayerPos</value>
  <value name="hidNodeName" type="Hash">BEDD52CA</value>
  <value hash="0D9C8B1A" type="String">Icon_PlayerPos_LOD0</value>
  <value name="hidNodeNameLOD0" type="Hash">591F2AD4</value>
  <value name="hidDetailObject" type="Bool">False</value>
</object>
```

For example, here is the entry for the map player arrow with the section removed:

```
<object hash="256A1FF9">
  <value name="Name" type="String">ObjectiveIcons.PlayerPosition</value>
  <object type="Entity">
    <value name="hidName" type="String">gadgets.ObjectiveIcons.PlayerPosition</value>
    <value name="disEntityId" type="UInt64">367</value>
    <value hash="D2B3429E" type="String">CEntity</value>
    <value name="hidEntityClass" type="Hash">50C95067</value>
    <value name="hidResourceCount" type="UInt32">1</value>
    <value name="hidPos" type="Vector3">
      <x>0</x>
      <y>0</y>
      <z>0</z>
    </value>
    <value name="hidAngles" type="Vector3">
      <x>0</x>
      <y>0</y>
      <z>0</z>
    </value>
    <value name="hidPos_precise" type="Vector3">
      <x>0</x>
      <y>0</y>
      <z>0</z>
    </value>
    <value name="hidConstEntity" type="Bool">False</value>
  </object>
  <object type="Components">
    <object type="CFileDescriptorComponent">
      <value name="hidHasAliasName" type="Bool">False</value>
      <value hash="2A7BCA49" type="String">graphics\objects\mapcompass\icon_playerpos.xml</value>
      <value name="fileName" type="Hash">535B768A</value>
      <value name="hidDescriptor" type="Rml">
        <hidDescriptor>
          <component class="GraphicComponent" version="2" detail="0">
            <object index="0" boneName="Icon_PlayerPos_LOD0" bboxMin="-0.00730638,-0.00612232,-5.82406e-007"
            bboxMax="0.00712985,0.0116253,-5.82406e-007" />
            <resource fileName="graphics\Objects\MapCompass\Icon_PlayerPos.xbg" bboxMin="-0.00730638,-0.00612232,-5.82406e-007"
            bboxMax="0.00712985,0.0116253,-5.82406e-007" />
            <skeleton name="Icon_PlayerPos" pos="0,0,0" rot="1,-0,-0,-0" />
          </component>
        </hidDescriptor>
      </value>
    </object>
    <object type="CGraphicComponent">
      <value name="hidHasAliasName" type="Bool">False</value>
      <value name="bIntelHackGliderOn" hash="599225A9" type="Bool">False</value> <!-- type="BinHex" value="00" -->
      <value name="bCastShadow" type="Bool">False</value>
      <value name="bReceiveShadow" type="Bool">False</value>
      <value name="bCastAmbientShadow" type="Bool">False</value>
      <value name="olgLighGroup" type="Hash">00000181</value>
      <value name="bAllowCullBySize" type="Bool">True</value>
      <value name="agAmbientGroup" type="Hash">00000000</value>
      <value name="bBehaveLikeAPickup" type="Bool">False</value>
      <value name="bShowInReflection" type="Bool">False</value>
      <value name="bAlwaysShowInReflection" type="Bool">False</value>
      <value name="bOverrideLODSphere" type="Bool">False</value>
      <value name="fLODSphereRadius" type="Float">0</value>
      <value name="hidSkyOcclusion0" type="Hash">FFFFFFFF</value>
      <value name="hidSkyOcclusion1" type="Hash">FFFFFFFF</value>
      <value name="hidSkyOcclusion2" type="Hash">FFFFFFFF</value>
```

```
<value name="hidSkyOcclusion3" type="Hash">FFFFFFFF</value>
<value name="hidGroundColor" type="Hash">FFFFFFFF</value>
<value name="hidObjectHeight" type="Float">3</value>
<value name="hidHeightAbove" type="Float">0.0</value> <!-- type="BinHex" value="00000000" -->
<value name="hidHasAmbientValues" type="Bool">False</value>
</object>
</object>
</object>
</object>
```

Removing coloured road signs

Decoding required

xx_OA_StreetSigns.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

This file has separate entries for every road sign that can have a different colour, there are quite a few:

- MissionObjectiveSigns.AfriQaTelecomSign
- MissionObjectiveSigns.AirfieldSign
- MissionObjectiveSigns.CallingCardandPhoneRechargingStandSign
- MissionObjectiveSigns.CattleXingSign
- MissionObjectiveSigns.ClaesProductsSign
- MissionObjectiveSigns.DentalClinicSign
- MissionObjectiveSigns.DogFightsSign
- MissionObjectiveSigns.DogonVillageSign
- MissionObjectiveSigns.FortSign
- MissionObjectiveSigns.FreshFishSign
- MissionObjectiveSigns.GeneralStoreSign
- MissionObjectiveSigns.GokaFallsSign
- MissionObjectiveSigns.HardwareStoreSign
- MissionObjectiveSigns.LumberSign
- MissionObjectiveSigns.MarinaSign
- MissionObjectiveSigns.MertensSegoloCo
- MissionObjectiveSigns.MikesBarSign
- MissionObjectiveSigns.MokubaSign
- MissionObjectiveSigns.MosateSelaoSign
- MissionObjectiveSigns.MsPipeline
- MissionObjectiveSigns.NorthRailyardSign
- MissionObjectiveSigns.OGCSign
- MissionObjectiveSigns.PalaSign
- MissionObjectiveSigns.PetroSahelSign
- MissionObjectiveSigns.PoliceStationSign
- MissionObjectiveSigns.PolytechnicSign
- MissionObjectiveSigns.PostOfficeSign
- MissionObjectiveSigns.RailXingSign
- MissionObjectiveSigns.RangerStationSign
- MissionObjectiveSigns.SakoBreweries
- MissionObjectiveSigns.ScrapSalvageSign
- MissionObjectiveSigns.SedikoSign
- MissionObjectiveSigns.SefapaneSign
- MissionObjectiveSigns.SehlakalaseSign
- MissionObjectiveSigns.SepokoSign
- MissionObjectiveSigns.ShwasanaSign
- MissionObjectiveSigns.SlaughterhouseSign
- MissionObjectiveSigns.TaemoCoSign
- MissionObjectiveSigns.TobaccoandNewsStandSign
- MissionObjectiveSigns.UndertakerSign
- MissionObjectiveSigns.VeterinarianSign
- MissionObjectiveSigns.WeaponShop
- MissionObjectiveSigns.WeelegolVillage
- MissionObjectiveSigns.WellandWindmillShopSign
- MissionObjectiveSignsSafeHouse.SafeHouse_A1BU00
- MissionObjectiveSignsSafeHouse.SafeHouse_A1LM01
- MissionObjectiveSignsSafeHouse.SafeHouse_A1LM02
- MissionObjectiveSignsSafeHouse.SafeHouse_A1LM03
- MissionObjectiveSignsSafeHouse.SafeHouse_A1LM04
- MissionObjectiveSignsSafeHouse.SafeHouse_A1LM05
- MissionObjectiveSignsSafeHouse.SafeHouse_A1LM06
- MissionObjectiveSignsSafeHouse.SafeHouse_A2LM07
- MissionObjectiveSignsSafeHouse.SafeHouse_A2LM08
- MissionObjectiveSignsSafeHouse.SafeHouse_A2LM09
- MissionObjectiveSignsSafeHouse.SafeHouse_A2LM10
- MissionObjectiveSignsSafeHouse.SafeHouse_A2LM11
- MissionObjectiveSignsSafeHouse.SafeHouse_A2LM12

To remove the colours they change to for missions, we are going to edit their sections with the title “Colors”.

By default this section looks like this:

```
<object hash="C512C6A9" type="Colors">
  <value name="None" hash="DFA2AFF1" type="BinHex">0000803F0000803F0000803F0000803F</value>
  <value name="Main" hash="1F1A625A" type="BinHex">0000803F000000000000000000000000</value>
  <value name="Subvert" hash="7D65CCD1" type="Vector4">
    <x>0.0</x>
    <y>0.2</y>
    <z>1.0</z>
```

```
<w>0.0</w>
</value> <!-- type="BinHex" value="00000000CDCC4C3E0000803F00000000" -->
<value hash="590E69F7" type="BinHex">9A99593F9A99593F000000000000803F</value>
</object>
```

We are going to edit all of these sections so the signs have no colour for every mission type. The subvert section needs to be edited to be the same as the ‘None’ and ‘Main’ lines. You can copy and paste this completed “Colors” section over the same for each sign you want to edit:

```
<object hash="C512C6A9" type="Colors">
  <value name="None" hash="DFA2AFF1" type="BinHex">0000803F0000803F0000803F0000803F</value>
  <value name="Main" hash="1F1A625A" type="BinHex">0000803F0000803F0000803F0000803F</value>
  <value name="Subvert" hash="7D65CCD1" type="BinHex">0000803F0000803F0000803F0000803F</value>
  <value hash="590E69F7" type="BinHex">0000803F0000803F0000803F0000803F</value>
</object>
```

Guide - Limited saving

This guide will cover how to remove quicksaving and saving from the pause menu. The player will be restricted to in-game save points.

Step 1: Removing quicksaving

```
inputactionmapsingle.xml (\patch_unpack\config\)
```

There is a section of this file that controls quicksaving and quickloading, with the title “quicksaveload”. It looks like this:

```
<ActionMap name="quicksaveload" resendOnChange="0" >
  <Import actionmap="quicksaveload_remap" optional=""/>
  <Binding input="kb:f5" action="release" signal="quicksave"/>
  <Binding input="kb:f9" action="release" signal="quickload"/>
</ActionMap>
```

To remove quicksaving we can just delete the line that references it, so your finished section looks like this:

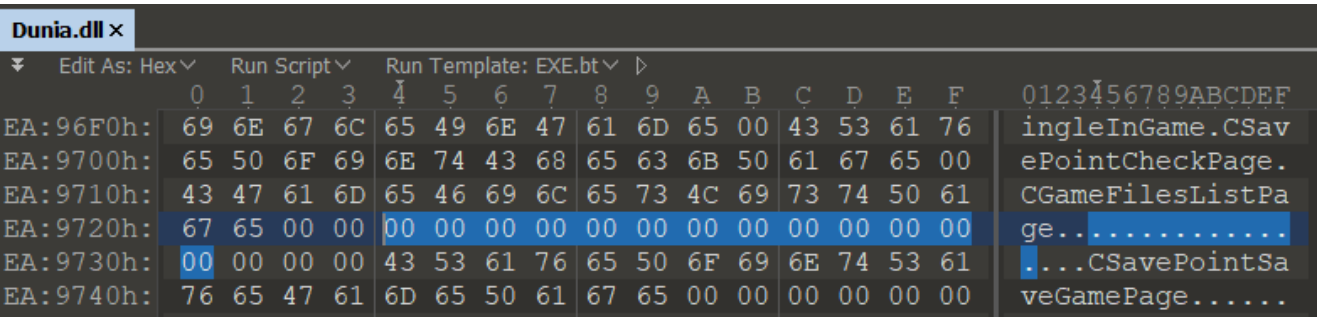
```
<ActionMap name="quicksaveload" resendOnChange="0" >
  <Import actionmap="quicksaveload_remap" optional=""/>
  <Binding input="kb:f9" action="release" signal="quickload"/>
</ActionMap>
```

Step 2: Removing saving from the pause menu

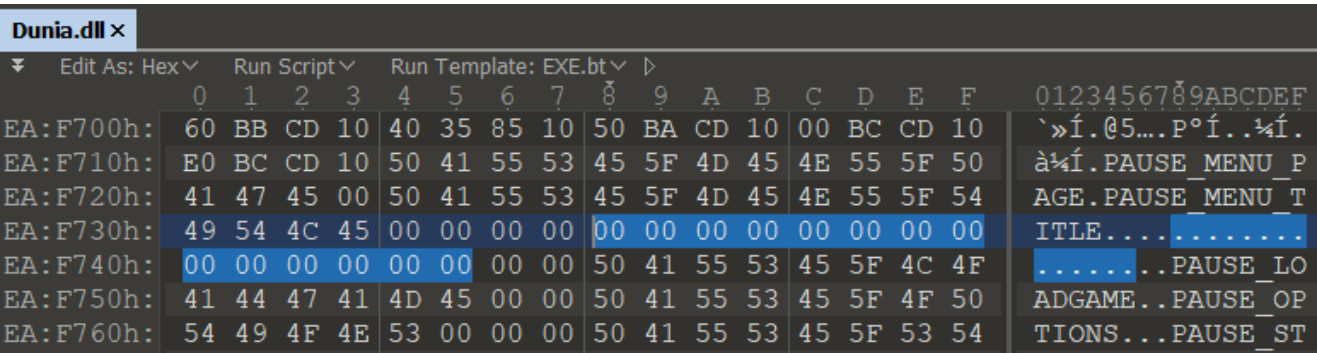
```
Dunia.dll (\Far Cry 2\bin\)
```

This is going to involve two edits. The pause menu has the option to “Save Game” and one edit will remove the save screen that would appear when you select it, and a second edit will remove that option so it appears blank.

To remove the save screen, find the section that says “CSaveGamePage” (43 53 61 76 65 47 61 6D 65 50 61 67 65). Once you’ve found it, replace all its hex values on the left side of the screen with zeroes. It should look like this:



To remove the “Save Game” label, find the section that says “PAUSE_SAVEGAME” (50 41 55 53 45 5F 53 41 56 45 47 41 4D 45). Once you’ve found it, replace all its hex values on the left side of the screen with zeroes. It should look like this:



Weapons

Base game weapons

The stats for the base weapons are controlled by the files “xx_WeaponProperties.xml” and “xx_Weapons.xml” within “entitylibrarypatchoverride.fcb” from \patch_unpack\generated\. I’ve included the complete files in there already but if you are starting from scratch they need to be copied in from “entitylibrary.fcb” in \patch_unpack\worlds\tmpla\generated\.

DLC weapons

The stats for the DLC weapons have the same structure as the base game weapons, but in two different files. The DLC weapon files are “1_DLC1Weapons.xml” and “3_WeaponProperties.xml” within “entitylibrary.fcb” from \patch_unpack\downloadcontent\dlc1\generated\.

Weapon Entry Titles

When editing weapons each .xml file contains entries that are specifically named for each weapon. Some weapons have multiple entries for different varieties. These are the different kinds:

Special.RPG7 - The regular singleplayer version, available from the weapon armories.

Special.RPG7.Mikes_Rusty - The version available during the showdown at Mike’s Bar.

Special.RPG7.Persistent - The version that can be found in the open world.

Special.RPG7.RPG7_Merc - The enemies don’t have three weapon slots like the player. This means that weapons that go in the special slot for the player have alternate versions that are primaries for the enemies to use. The enemies will drop the correct version for the player to use when killed but it’s still useful to edit these weapons too if you want to rebalance the enemies’ damage output or if you’ve changed something noticeable like rate of fire and want the enemies to be consistent.

Special.RPG7.Multi - The multiplayer version.

All of these versions are relevant apart from the one for multiplayer. If you want your weapon edits to be fully consistent you should make the same changes for every version.

This is the complete list of entries so you can easily Ctrl-F and find them all:

- Machete
 - Modern machete - HandToHand.Machete
 - Homemade machete - HandToHand.Machete_HomeMade
 - Primitive machete - HandToHand.Machete_Primitive

- Pistols
 - Makarov - Secondary.Makarov
 - Silenced Makarov - Secondary.SilencedMakarov_6P9
 - Star .45 - Secondary.Star45
 - Eagle .50 - Secondary.DesertEagle, Secondary.DesertEagle.Persistent

- SMGs
 - Mac-10 - Secondary.MAC10, Secondary.MAC10.Mikes_Rusty
 - Uzi - Secondary.Uzi

- Shotguns
 - Homeland 37 - Primary.Ithaca
 - Spas-12 - Primary.SPAS12, Primary.SPAS12.Persistent
 - USAS-12 - Primary.USAS12, Primary.USAS12.Persistent

- Assault Rifles
 - G3KA4 - Primary.G3KA4
 - AK-47 - Primary.AK47
 - Gold AK-47 - Primary.AK47.AK47_Gold
 - MP5 - Primary.MP5, Primary.MP5.Mikes_Rusty, Primary.MP5.Persistent
 - FAL Paratrooper - Primary.FNFAL, Primary.FNFAL.Persistent
 - AR-16 - Primary.M16, Primary.M16.Persistent

- LMGs
 - PKM - Special.PKM, Special.PKM.Mikes_Rusty, Special.PKM.PKM_Merc

M249 Saw - Special.M249_Saw, Special.M249_Saw.Persistent, Special.M249_Saw.M249_Saw_Merc

Sniper Rifles

M1903 - Special.M1903, Special.M1903.M1903_Merc
Dragunov - Primary.Dragunov, Primary.Dragunov.Mikes_Rusty, Primary.Dragunov.Persistent, Primary.Dragunov.Dragunov_Merc
AS50 - Primary.AS50, Primary.AS50.Persistent
Dart Rifle - Special.Dart_Rifle

Explosives/Flamethrower

Flare Gun - Special.Flare_Gun, Special.Flare_Gun.Flare_Gun_Merc
IEDS - Secondary.IED
M79 - Secondary.M79, Secondary.M79.Mikes_Rusty
RPG - Special.RPG7, Special.RPG7.Mikes_Rusty, Special.RPG7.Persistent, Special.RPG7.RPG7_Merc
Carl G - Special.Carl_Gustaf, Special.Carl_Gustaf.Persistent, Special.Carl_Gustaf.Carl_Gustaf_Merc
Mortar - Special.Mortar, Special.Mortar.Persistent, Special.Mortar.Mortar_Merc
Flamethrower - Special.LPO50, Special.LPO50.Persistent

DLC Weapons

Sawed off shotgun - DLC1.SawedOffShotgun
Silenced shotgun - DLC1.SilencedShotgun
Explosive crossbow - DLC1.Crossbow

Accuracy

Regular accuracy

Decoding required

Base game weapons - xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\
DLC weapons - 3_WeaponProperties.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Accuracy is controlled by the “fAmplitude” stats in the “BulletSpread” section.

You can change the value for each different player state, which are different combinations of aiming, crouching and jumping.

```
<object hash="1383D9F5" type="BulletSpread">
  <value name="fAmplitude" hash="3026125D" type="Float">3.5</value> <!-- type="BinHex" value="00006040" -->
  <value name="fFrequency" hash="7DF4325F" type="Float">35.0</value> <!-- type="BinHex" value="00000C42" -->
</object>
<object hash="33DBF44C" type="BulletSpread_IronSight">
  <value name="fAmplitude" hash="3026125D" type="Float">0.4</value> <!-- type="BinHex" value="CDCCCC3E" -->
  <value name="fFrequency" hash="7DF4325F" type="Float">35.0</value> <!-- type="BinHex" value="00000C42" -->
</object>
<object hash="A7EC6750" type="BulletSpreadCrouch">
  <value name="fAmplitude" hash="3026125D" type="Float">1.0</value> <!-- type="BinHex" value="0000803F" -->
  <value name="fFrequency" hash="7DF4325F" type="Float">35.0</value> <!-- type="BinHex" value="00000C42" -->
</object>
<object hash="21FDF772" type="BulletSpreadCrouch_IronSight">
  <value name="fAmplitude" hash="3026125D" type="Float">0.38</value> <!-- type="BinHex" value="5C8FC23E" -->
  <value name="fFrequency" hash="7DF4325F" type="Float">35.0</value> <!-- type="BinHex" value="00000C42" -->
</object>
<object hash="A071CB54" type="BulletSpreadJump">
  <value name="fAmplitude" hash="3026125D" type="Float">4.5</value> <!-- type="BinHex" value="00009040" -->
  <value name="fFrequency" hash="7DF4325F" type="Float">35.0</value> <!-- type="BinHex" value="00000C42" -->
</object>
```

Shotgun accuracy

Decoding required

Base game weapons - xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\
DLC weapons - 3_WeaponProperties.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Shotgun accuracy is controlled by the stats “fAngleYawBulletSpread”, “fAnglePitchBulletSpread”, “fSecondaryAngleYawBulletSpread” and “fSecondaryAnglePitchBulletSpread”, all of them in the “FireStrategyProperties” section.

These can be visualised as “fAngleYaw/PitchBulletSpread” controlling the initial accuracy of your shots, and “fSecondaryAngleYaw/PitchBulletSpread” controlling the accuracy of your shots after a few metres. The ratio between the two sets of values is important. For more accurate shotguns I found that a 1:2 ratio gives a good balance and edit the accuracy values from there.

Yaw is the horizontal accuracy and pitch is the vertical accuracy.

```
<object type="FireStrategyProperties">
  <value name="bUseAngleSpread" type="Bool">True</value>
  <value name="iBulletsShot" type="UInt32">7</value>
  <value name="iBurstLength" type="UInt32">0</value>
  <value name="fAngleYawBulletSpread" type="Float">2</value>
  <value name="fAnglePitchBulletSpread" type="Float">2</value>
  <value name="bHasMuzzleLight" type="Bool">True</value>
  <value name="fSecondaryAngleYawBulletSpread" hash="6E2151FF" type="Float">4.0</value> <!-- type="BinHex" value="00008040" -->
  <value name="fSecondaryAnglePitchBulletSpread" hash="07F52A4D" type="Float">4.0</value> <!-- type="BinHex" value="00008040" -->
  <value hash="F8F5F0F8" type="String">Weapon.MetalShellMedium</value>
```

```
<value name="matimpShellImpactFx" type="Hash">561ED150</value>
<value hash="EB8DE264" type="String">Weapon.Bullet</value>
<value name="matimpBulletImpactFx" type="Hash">792B8A0E</value>
<value hash="74A94828" type="String">Weapon.Bullet</value>
<value name="matimpSecondaryBulletImpactFx" type="Hash">792B8A0E</value>
<object type="Network">
  <value name="strControllerNetObjectType" type="String"></value>
</object>
```

Accuracy while moving

Decoding required

Base game weapons - xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC weapons - 3_WeaponProperties.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Accuracy while moving is controlled by the stat “fBulletSpread_MovementModifier” in the “FirstPerson” section. This works as a proportional modifier, so any value higher than 1 will increase bullet spread while moving and a value of 1.25 will increase bullet spread by 25%.

```
<object hash="1E97B101" type="FirstPerson">
  <value name="fBulletSpread_MovementModifier" hash="EA167604" type="Float">1.25</value> <!-- type="BinHex" value="0000A03F" -->
```

Ammo Type

Decoding required

Base game weapons - xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC weapons - 3_WeaponProperties.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Ammo is controlled by the “ammoAmmoType” and “AB258E09” values in the “Ammo” section. I don’t know exactly how the two of these work but both need to be changed.

Here are the different values for the ammo types:

Pistol ammo
“AB258E09” = “6465736572746561676C6500”
“ammoAmmotype” = “6D6540FA”

SMG ammo
“AB258E09” = “736D6700”
“ammoAmmotype” = “AA73EE0A”

Shotgun ammo
“AB258E09” = “73686F7467756E00”
“ammoAmmotype” = “EEAE53E1”

Assault rifle ammo
“AB258E09” = “61737361756C747269666C6500”
“ammoAmmotype” = “BC6782FC”

LMG ammo
“AB258E09” = “6C6D6700”
“ammoAmmotype” = “BD090A47”

Sniper rifle ammo
“AB258E09” = “736E697065727269666C6500”
“ammoAmmotype” = “7D6BD5F2”

Dart rifle ammo
“AB258E09” = “646172747300”
“ammoAmmotype” = “FC2096BC”

MGL140 ammo
“AB258E09” = “6D676C31343000”
“ammoAmmotype” = “E710123D”

Rocket launcher/Explosive crossbow ammo
“AB258E09” = “726F636B657400”
“ammoAmmotype” = “CEB9BB1E”

M79 ammo
“AB258E09” = “6D373900”
“ammoAmmotype” = “704CA95D”

IED ammo
“AB258E09” = “69656400”
“ammoAmmotype” = “EA12131E”

Flare gun ammo

“AB258E09” = “666C61726500”
“ammoAmmotype” = “C86412FF”

Flamethrower ammo
“AB258E09” = “6675656C00”
“ammoAmmotype” = “31BD6FE9”

Mortar ammo
“AB258E09” = “6D6F7274617200”
“ammoAmmotype” = “4EE9BFD6”

```
<object hash="4FBDD114" type="Ammo">  
  <value hash="AB258E09" type="BinHex">6675656C00</value>  
  <value name="ammoAmmoType" hash="5957C8C7" type="Hash">31BD6FE9</value> <!-- type="BinHex" value="E96FBD31" -->
```

Auto Reload

There are two ways of enabling and disabling auto reload. Editing the weapons involves changing more values but your change will be applied on any saved game. Editing the playable characters involves changing less values but you need to start a new game for your change to take effect.

Option 1 - Editing weapons

Base game weapons - xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC weapons - 3_WeaponProperties.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Auto reload is controlled by the “bAutoReload” stat in the “CommonProperties” section. Enable or disable it by changing the value to “True” or “False”.

```
<object type="CommonProperties">  
  <value name="sName" type="String">ak47</value>  
  <value name="sDisplayName" type="String">AK-47</value>  
  <value name="fReloadTime" type="Float">0</value>  
  <value name="bAutoReload" type="Bool">True</value>  
  <value name="bIsSilent" type="Bool">False</value>
```

Option 2 - Editing playable characters

xx_player.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated)

Each playable character has their own section of this file, these are the entry titles:

- MainCharacter.PawnPlayer.Andre_Hyppolite
- MainCharacter.PawnPlayer.Frank_Bilders
- MainCharacter.PawnPlayer.Hakim_Echebbi
- MainCharacter.PawnPlayer.Josip_Idromeno
- MainCharacter.PawnPlayer.Marty_Alencar
- MainCharacter.PawnPlayer.Paul_Ferenc
- MainCharacter.PawnPlayer.Quarbani_Singh
- MainCharacter.PawnPlayer.Warren_Clyde
- MainCharacter.PawnPlayer.Xianyong_Bai

Auto reload is controlled by the “bAutoReload” stat in the “Inventory” section. Enable or disable it by changing the value to “True” or “False”.

```
<object type="Inventory">  
  <value hash="8C965C28" type="String">player</value>  
  <value name="packInventoryPack" type="Hash">98197A65</value>  
  <value name="archGPSVehicleArchetype" type="String">gadgets.Equipped.Compass_Vehicle</value>  
  <value name="bUnlimitedAmmo" type="Bool">False</value>  
  <value name="bAutoReload" type="Bool">True</value>  
  <value name="bAutoDraw" type="Bool">True</value>  
  <value hash="130CDED8" type="String">hand_hand</value>  
  <value name="sInitialWeaponCategory" type="Hash">E97A284A</value>  
</object>
```

Damage

Base game weapons - xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC weapons - 3_WeaponProperties.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Damage is controlled by the “nLevel” stat in the “Stim_ImpactDamage” section. Be careful to find the right section because there are lots of other “nLevel” stats.

```
<object type="Stim_ImpactDamage">  
  <value name="hidEventName" type="String">Stims</value>  
  <value name="eventMask" type="UInt32">2</value>
```

<value name="hidTargetEntityId" type="UInt64">18446744073709551615</value>
<value hash="FC25E1F1" type="String">BulletImpact</value>
<value name="sDetail" type="Hash">AB3FB98A</value>
<value name="selType" type="UInt32">3</value>
<value name="nLevel" type="UInt32">26</value>
<value name="hidShowType" type="BinHex">01</value>
<value name="hidShowRadius" type="BinHex">00</value>
<value name="fPhysImpulse" type="Float">70</value>

Explosives

Decoding required

Base game explosives - xx_Weapons.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\
DLC explosive - 1_DLC1Weapons.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

There are two main explosion types that we might have some use in editing, regular explosions and fire explosions. Explosives in Far Cry 2 use different combinations of these, grenades use only regular explosions, molotovs use only fire explosions and all other explosives use both.

This is a full list of entry titles for the explosives:

Grenade - Grenades.M67
Molotov - Grenades.Molotov

IED (Mine) - Explosives.IED_Base.IED_Mine
IED (Mortar shell) - Explosives.IED_Base.IED_MortarShell
IED (Pipe bomb) - Explosives.IED_Base.IED_PipeBomb

M79 grenade - Grenades.M79_Grenade
MGL140 grenade - Grenades.MGL140_Grenade
RPG rocket - Rockets.RPG7Rocket
Carl G rocket - Rockets.CarlGustafRocket
Crossbow bolt - DLC1.Arrow
Mortar shell - Explosives.MortarShell

All of these entries have an “ExplodeStims” section where we can edit the explosive properties. In this section there may be two or three subsections under the titles “Stim”. Each “Stim” section is a different element of the explosion. We can tell the different explosive elements apart with the “selType” value, where “4” is a regular explosion and “7” is a fire explosion.

The main stats we can change here are: “nLevel”, “fRadius” and “fPhysImpulse”.

“nLevel” controls the damage an explosion does. This doesn’t affect fire explosions as fire still does the same damage.

“fRadius” controls the size of an explosion.

“fPhysImpulse” controls the physics power of an explosion, so how much it will push all the objects around it. Fire explosions don’t have this stat.

This is an example regular explosion:

```
<object type="Stim">
  <value name="selStimType" type="UInt32">2</value>
  <value name="hidEventName" type="String">Stims</value>
  <value name="eventMask" type="UInt32">2</value>
  <value name="hidTargetEntityId" type="UInt64">18446744073709551615</value>
  <value hash="FC25E1F1" type="String"></value>
  <value name="sDetail" type="Hash">FFFFFFF</value>
  <value name="selType" type="UInt32">4</value>
  <value name="nLevel" type="UInt32">30</value>
  <value name="fRadius" type="Float">7</value>
  <value name="bFalloff" type="Bool">True</value>
  <value name="nFalloffMinLevel" type="UInt32">24</value>
  <value name="hidShowType" type="Bool">True</value> <!-- type="BinHex" value="01" -->
  <value name="hidShowRadius" type="Bool">True</value> <!-- type="BinHex" value="01" -->
  <value name="fPhysImpulse" type="Float">100</value>
```

This is an example fire explosion:

```
<object type="Stim">
  <value name="selStimType" type="UInt32">0</value>
  <value name="hidEventName" type="String">Stims</value>
  <value name="eventMask" type="UInt32">2</value>
  <value name="hidTargetEntityId" type="UInt64">18446744073709551615</value>
  <value hash="FC25E1F1" type="String"></value>
  <value name="sDetail" type="Hash">FFFFFFF</value>
  <value name="selType" type="UInt32">7</value>
  <value name="nLevel" type="UInt32">20</value>
  <value name="fRadius" type="Float">1</value>
  <value name="bFalloff" type="Bool">True</value>
  <value name="nFalloffMinLevel" type="UInt32">8</value>
  <value name="hidShowType" type="Bool">True</value> <!-- type="BinHex" value="01" -->
  <value name="hidShowRadius" type="Bool">True</value> <!-- type="BinHex" value="01" -->
```

Fire Mode

There are two different stats that you can use to edit fire mode, one that controls overall full auto/single shot or “prepare shot” and another that controls how many shots a full auto weapon fires in a burst.

Overall fire mode

Base game weapons - xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC weapons - 3_WeaponProperties.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Overall fire mode is controlled by the “selfFireRateMode” stat in the “FireRate” section.

These are the different values available: 0 = Single shot, 1 = Full auto, 2 = Prepare shot. Prepare shot is used for weapons that have an animation play before they can fire again, like the M1903 sniper and Ithaca shotgun.

```
<object type="FireRate">
  <value name="fBusyDuration" type="Float">0</value>
  <value name="iFireRate" type="Float">120</value>
  <value name="selfFireRateMode" type="UInt32">1</value>
```

Full auto fire modes

Base game weapons - xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC weapons - 3_WeaponProperties.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Full auto fire modes are controlled through the “iBurstLength” stat in the “FireStrategyProperties” section.

These are some examples of different values: 0 = Full auto, 1 = Single shot, 3 = Burst fire.

```
<object type="FireStrategyProperties">
  <value name="bUseAngleSpread" type="Bool">False</value>
  <value name="iBulletsShot" type="UInt32">1</value>
  <value name="iBurstLength" type="UInt32">3</value>
```

Fire Rate

Base game weapons - xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC weapons - 3_WeaponProperties.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Fire rate is controlled by the “iFireRate” stat in the “FireRate”section and is measured in rounds-per-minute.

```
<object type="FireRate">
  <value name="fBusyDuration" type="Float">0</value>
  <value name="iFireRate" type="Float">600</value>
  <value name="selfFireRateMode" type="UInt32">1</value>
```

Iron Sights

Movement speed

Decoding required

Base game weapons - xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC weapons - 3_WeaponProperties.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Iron sight movement speed is controlled by the “fMoveSpeedFactor” stat in the “Ironsight” section.

This works as a proportional modifier, so any value lower than 1 will decrease movement speed when aiming and a value of 0.5 will decrease movement speed by 50%.

```
<object hash="BB04E184" type="IronSight">
  <value name="fMoveSpeedFactor" hash="7D725133" type="Float">0.5</value> <!-- type="BinHex" value="0000003F" -->
  <value name="bCanIronsight" hash="E49EEB82" type="Bool">True</value> <!-- type="BinHex" value="01" -->
  <value name="fLookSensitivityFactor" hash="DD39539B" type="Float">0.5</value> <!-- type="BinHex" value="0000003F" -->
  <value name="flronsightFOV" hash="FB4ADD00" type="Float">1.1</value> <!-- type="BinHex" value="CDCC8C3F" -->
```

Zoom/FOV

Decoding required

Base game weapons - xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC weapons - 3_WeaponProperties.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Iron sight zoom/FOV is controlled by the “flronsightFOV” stat in the “Ironsight” section.

Only change this for weapons without sights, as otherwise you’ll cause some bugs.

A value of 1.309 means that the weapon won’t zoom when aiming. Decrease this value to increase zoom/FOV.

```
<object hash="BB04E184" type="IronSight">
  <value name="fMoveSpeedFactor" hash="7D725133" type="Float">0.5</value> <!-- type="BinHex" value="0000003F" -->
  <value name="bCanIronsight" hash="E49EEB82" type="Bool">True</value> <!-- type="BinHex" value="01" -->
  <value name="fLookSensitivityFactor" hash="DD39539B" type="Float">0.5</value> <!-- type="BinHex" value="0000003F" -->
  <value name="flronsightFOV" hash="FB4ADD00" type="Float">1.1</value> <!-- type="BinHex" value="CDCC8C3F" -->
```

Look sensitivity

Decoding required

Base game weapons - xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC weapons - 3_WeaponProperties.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Iron sight look sensitivity is controlled by the “fLookSensitivityFactor” stat in the “Ironsight” section.

This works as a proportional modifier, so any value lower than 1 will decrease look sensitivity when aiming and a value of 0.5 will decrease look sensitivity by 50%.

```
<object hash="BB04E184" type="IronSight">
  <value name="fMoveSpeedFactor" hash="7D725133" type="Float">0.5</value> <!-- type="BinHex" value="0000003F" -->
  <value name="bCanIronsight" hash="E49EEB82" type="Bool">True</value> <!-- type="BinHex" value="01" -->
  <value name="fLookSensitivityFactor" hash="DD39539B" type="Float">0.5</value> <!-- type="BinHex" value="0000003F" -->
  <value name="flronsightFOV" hash="FB4ADD00" type="Float">1.1</value> <!-- type="BinHex" value="CDCC8C3F" -->
```

Enable/disable

Decoding required

Base game weapons - xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC weapons - 3_WeaponProperties.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Enabling/disabling iron sights is controlled by the “bCanIronsight” stat in the “Ironsight”section.

This works by changing the value to either “True” or “False”.

I used this to enable an ironsight mode for the machetes to simulate creeping, I don’t see it being useful for anything else.

```
<object hash="BB04E184" type="IronSight">
  <value name="fMoveSpeedFactor" hash="7D725133" type="Float">0.5</value> <!-- type="BinHex" value="0000003F" -->
  <value name="bCanIronsight" hash="E49EEB82" type="Bool">True</value> <!-- type="BinHex" value="01" -->
  <value name="fLookSensitivityFactor" hash="DD39539B" type="Float">0.5</value> <!-- type="BinHex" value="0000003F" -->
  <value name="flronsightFOV" hash="FB4ADD00" type="Float">1.1</value> <!-- type="BinHex" value="CDCC8C3F" -->
```

Magazine Size

Decoding required

Base game weapons - xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC weapons - 3_WeaponProperties.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Magazine size is controlled by the “iAmmoInClip” stat in the “Ammo” section.

```
<object hash="4FBDD114" type="Ammo">
  <value hash="AB258E09" type="BinHex">73686F7467756E00</value>
  <value name="ammoAmmoType" hash="5957C8C7" type="Hash">EEAE53E1</value> <!-- type="BinHex" value="E153AEEE" -->
  <value name="iAmmoInClip" hash="88596C97" type="Int32">9</value> <!-- type="BinHex" value="09000000" -->
  <value name="iMaxAmmoCasual" hash="2A0F1CC2" type="Int32">63</value> <!-- type="BinHex" value="3F000000" -->
  <value name="iMaxAmmoExperimented" hash="C7DA96EA" type="Int32">36</value> <!-- type="BinHex" value="24000000" -->
  <value name="iMaxAmmoHardcore" hash="EF3C58C3" type="Int32">36</value> <!-- type="BinHex" value="24000000" -->
  <value name="iMaxAmmoInfamous" hash="DE33B3EC" type="Int32">27</value> <!-- type="BinHex" value="1B000000" -->
  <value name="bUsesClips" hash="B72CF1A1" type="Bool">True</value> <!-- type="BinHex" value="01" -->
  <value name="blsAmmoVisible" hash="6A9D69B4" type="Bool">False</value> <!-- type="BinHex" value="00" -->
</object>
```

Max Ammo

Decoding required

Base game weapons - xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC weapons - 3_WeaponProperties.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Max ammo is controlled by the “iMaxAmmoCasual”, “iMaxAmmoExperimented”, “iMaxAmmoHardcore” and “iMaxAmmoInfamous” stats in the “Ammo” section. As you can see there are separate stats for the different difficulty levels.

```
<object hash="4FBDD114" type="Ammo">
  <value hash="AB258E09" type="BinHex">73686F7467756E00</value>
  <value name="ammoAmmoType" hash="5957C8C7" type="Hash">EEAE53E1</value> <!-- type="BinHex" value="E153AEEE" -->
  <value name="iAmmoInClip" hash="88596C97" type="Int32">9</value> <!-- type="BinHex" value="09000000" -->
  <value name="iMaxAmmoCasual" hash="2A0F1CC2" type="Int32">63</value> <!-- type="BinHex" value="3F000000" -->
  <value name="iMaxAmmoExperimented" hash="C7DA96EA" type="Int32">36</value> <!-- type="BinHex" value="24000000" -->
  <value name="iMaxAmmoHardcore" hash="EF3C58C3" type="Int32">36</value> <!-- type="BinHex" value="24000000" -->
  <value name="iMaxAmmoInfamous" hash="DE33B3EC" type="Int32">27</value> <!-- type="BinHex" value="1B000000" -->
  <value name="bUsesClips" hash="B72CF1A1" type="Bool">True</value> <!-- type="BinHex" value="01" -->
  <value name="bIsAmmoVisible" hash="6A9D69B4" type="Bool">False</value> <!-- type="BinHex" value="00" -->
</object>
```

Projectiles - Rockets and Explosive Bolts

This includes RPG rockets, Carl G rockets and Crossbow bolts. The projectiles have their own entries separate from their respective weapons, these are their titles:

- RPG rocket - Rockets.RPG7Rocket
- Carl G rocket - Rockets.CarlGustafRocket
- Crossbow bolt - DLC1.Arrow

Speed

```
Base game projectiles - xx_Weapons.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)  
DLC projectile - 1_DLC1Weapons.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)
```

Projectile speed for the RPG rocket and crossbow bolt is controlled by the stat “fSpeed” in the “Fire” section.

```
<object type="Fire">
  <value name="fSpeed" type="Float">50</value>
  <value name="fGravity" type="Float">-0.55</value>
  <value hash="3BB1654D" type="BinHex">776561706F6E732E776561706F6E732E7270675F726F636B65745F656A6563745F737461727400</value>
  <value name="psStartPS" type="Hash">7D5C57B7</value>
```

Projectile speed for the Carl G rocket is controlled by the “flmpulse” stat in the “Ignite” section.

```
<object type="Ignite">
  <value name="flmpulse" type="Float">75</value>
  <value name="fTime" type="Float">0</value>
  <value hash="3BB1654D" type="BinHex">00</value>
```

Gravity

```
Base game projectiles - xx_Weapons.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)  
DLC projectile - 1_DLC1Weapons.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)
```

Projectile gravity is controlled by the “fTime” and “fGravity” stats in the “Fall” section.

“fTime” controls the time until the projectile starts to drop.

“fGravity” controls the speed with which the projectile drops once that time has run out.

Note that with time being a factor in when the projectile starts to fall, your projectile speed will also influence how far away the projectile is when it starts to drop.

```
<object type="Fall">
  <value name="fTime" type="Float">7</value>
  <value name="fGravity" type="Float">-9.8</value>
```

Projectiles - Grenades

Speed

```
xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
```

Some of the grenade launchers share the same projectile type, so if you want to edit the projectile speed of individual weapons we are going to edit the weapon entries instead. These are:

- M79 - Secondary.M79, Secondary.M79.Mikes_Rusty
- MGL-140 - Primary.MGL140, Primary.MGL140.Persistent
- MK19 - MountedWeapons.MK19_Mounted

The speed/power with which the grenades are fired is controlled by the “fInitialImpulse” stat within the “FireStrategyProperties” section.

```
<value name="matimpSecondaryBulletImpactFx" type="Hash">FFFFFFF</value>
<value name="archProjectileArchetype" type="String">weapons.Grenades.M79_Grenade.Multi</value>
<value name="fInitialImpulse" type="Float">600</value>
<value name="fMalfunctionImpulse" type="Float">100</value>
<value name="fMalfunctionDetonateAfterHit" type="Float">1</value>
```

Range

Regular effective range/max range

Base game weapons - xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC weapons - 3_WeaponProperties.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Max range is controlled by the “fRange” stat, beyond this you won’t do any damage.

Effective range is controlled by the “x” and “y” stats in the “vectorEffectiveRange” and “vectorEffectiveRangeIS” sections. There are four numbers here but they should run into each other, so the second and third numbers should be the same. With this you can visualise these as the three numbers, as in the example below it’s 45>60>75. I don’t know exactly how these numbers impact the damage drop off so you’ll probably need to do some trial and error to get the results you want.

```
<value name="fRange" type="Float">300</value>
  <value name="vectorEffectiveRange" type="Vector2">
    <x>45</x>
    <y>60</y>
  </value>
  <value name="vectorEffectiveRangeIS" type="Vector2">
    <x>60</x>
    <y>75</y>
  </value>
```

Flamethrower range

xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

Flamethrower range is controlled by the “fSize” stat in the “FlameMesh” section.

I also suggest increasing the speed of the flame to compensate for the increased range. Flamethrower flame speed is controlled by the “fSpeed” stat in the “FlameMesh” section.

```
<object type="FlameMesh">
  <value name="fSize" type="Float">10</value>
  <value name="fSplineTension" type="Float">0</value>
  <value name="fSplineContinuity" type="Float">0</value>
  <value name="fSplineBias" type="Float">0</value>
  <value name="fPSSpawnTime" type="Float">0.03</value>
  <value name="archSpawnTimeAngularSpeedRatioCurve" type="String">Curves.ShootingSystem.FlameThrowerEmissionVSAngularSpeed</value>
  <value name="fSegmentLength" type="Float">0.8</value>
  <value name="fRestitutionInterpolationDist" type="Float">2</value>
  <value name="fSizeGrowInterpolationDist" type="Float">10</value>
  <value name="fSizeShrinkInterpolationDist" type="Float">10</value>
  <value name="fGravityScalePlayerPitch" type="Float">5</value>
  <value name="fGravityInterpolationDist" type="Float">10</value>
  <value name="iRingNVertex" type="Float">1.401298E-44</value>
  <value name="fRingStartAngle" type="Float">0</value>
  <value name="fTeseletion" type="Float">0.1</value>
  <value name="fSpeed" type="Float">15</value>
```

Recoil

Overall Recoil

Decoding required

Base game weapons - xx_Weapons.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC weapons - 1_DLC1Weapons.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Recoil is controlled by the “fHorizontalRecoilPerShot” and “fVerticalRecoilPerShot” stats in the “ReliabilityLevelsData”. There are sections for the different reliability levels so the weapon can have increased recoil as it degrades.

```
<object type="ReliabilityLevelsData">
  <object type="Failure">
    <value name="fHorizontalRecoilPerShot" type="Float">0.46</value>
    <value name="fVerticalRecoilPerShot" type="Float">1.7</value>
    <value name="fBulletDeviationMax" type="Float">0</value>
    <value name="fJamProbabilityPerReload" type="Float">0.08</value>
```

```
</object>
<object type="Low">
  <value name="fHorizontalRecoilPerShot" type="Float">0.44</value>
  <value name="fVerticalRecoilPerShot" type="Float">1.5</value>
  <value name="fBulletDeviationMax" type="Float">0</value>
  <value name="fJamProbabilityPerReload" type="Float">0.04</value>
</object>
<object type="Medium">
  <value name="fHorizontalRecoilPerShot" type="Float">0.42</value>
  <value name="fVerticalRecoilPerShot" type="Float">1.3</value>
  <value name="fBulletDeviationMax" type="Float">0</value>
  <value name="fJamProbabilityPerReload" type="Float">0.02</value>
</object>
<object type="High">
  <value name="fHorizontalRecoilPerShot" type="Float">0.4</value>
  <value name="fVerticalRecoilPerShot" type="Float">1.1</value>
  <value name="fBulletDeviationMax" type="Float">0</value>
  <value name="fJamProbabilityPerReload" type="Float">0</value>
</object>
```

Recoil recovery

Decoding required

Base game weapons - xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC weapons - 3_WeaponProperties.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Revoil recovery is controlled by the “iRecoilRecoveryLevel” stat in the “Recoil” section.

Every weapon apart from the PKM has a value of 1 for this, the PKM has a value of 2. I recommend reducing this to 1. There are other values to tweak in this section if you want to further mess with the recoil.

```
<object hash="3B75D90F" type="Recoil">
  <value name="iRecoilRecoveryLevel" hash="158EFFD8" type="Int32">2</value> <!-- type="BinHex" value="02000000" -->
  <value name="fRecoilAchieveTime" hash="C0671E89" type="Float">0.08</value> <!-- type="BinHex" value="0AD7A33D" -->
  <value name="fRecoilAnimationWeight" hash="641C31C5" type="Float">1.0</value> <!-- type="BinHex" value="0000803F" -->
  <value name="fRecoilMax" hash="0788D065" type="Float">45.0</value> <!-- type="BinHex" value="00003442" -->
</object>
```

Reliability

Overall reliability

Base game weapons - xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC weapons - 3_WeaponProperties.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Overall weapon reliability is controlled by the “iClipsForSelfDestruct” stat, measured in how many magazines you can fire before the weapon breaks.

<value name="iClipsForSelfDestruct" type="UInt32">6</value>

Likelihood to jam

Decoding required

Base game weapons - xx_Weapons.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC weapons - 1_DLC1Weapons.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

A weapon’s likelihood to jam is controlled by the “fJamProbabilityPerReload” stat in the “ReliabilityLevelsData” section. You can set separate likelihoods for the different weapon degradation levels and this is a percentage chance out of 100 per time you reload the weapon.

```
<object type="ReliabilityLevelsData">
  <object type="Failure">
    <value name="fHorizontalRecoilPerShot" type="Float">0.45</value>
    <value name="fVerticalRecoilPerShot" type="Float">9.5</value>
    <value name="fBulletDeviationMax" type="Float">0</value>
    <value name="fJamProbabilityPerReload" type="Float">0.12</value>
  </object>
  <object type="Low">
    <value name="fHorizontalRecoilPerShot" type="Float">0.4</value>
    <value name="fVerticalRecoilPerShot" type="Float">9</value>
    <value name="fBulletDeviationMax" type="Float">0</value>
    <value name="fJamProbabilityPerReload" type="Float">0.06</value>
  </object>
  <object type="Medium">
    <value name="fHorizontalRecoilPerShot" type="Float">0.35</value>
    <value name="fVerticalRecoilPerShot" type="Float">8.5</value>
    <value name="fBulletDeviationMax" type="Float">0</value>
    <value name="fJamProbabilityPerReload" type="Float">0.03</value>
  </object>
  <object type="High">
    <value name="fHorizontalRecoilPerShot" type="Float">0.3</value>
    <value name="fVerticalRecoilPerShot" type="Float">8</value>
    <value name="fBulletDeviationMax" type="Float">0</value>
  </object>
</object>
```

<value name="fJamProbabilityPerReload" type="Float">0</value>
</object>

Shotguns - Number of pellets fired

Base game weapons - xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\
DLC weapons - 3_WeaponProperties.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\

The number of pellets fired by shotgun is controlled by the “iBulletsShot” stat in the “FireStrategyProperties” section.

The default value is 7, the only difference is the sawed-off shotgun having a default of 14 because it fires both barrels at once.

<object type="FireStrategyProperties">
 <value name="bUseAngleSpread" type="Bool">True</value>
 <value name="iBulletsShot" type="UInt32">7</value>
 <value name="iBurstLength" type="UInt32">0</value>

Weapon Slot

Regular slots

Base game weapons - xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\
DLC weapons - 3_WeaponProperties.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\

Weapon slot is controlled by the “selCategory” stat in the “CommonProperties” section.

The value represents different weapon slots: 0 = Machete, 1 = Primary, 2 = Secondary, 3 = Special.

<value name="bSingleHitHealthFailure" type="Bool">False</value>
<value name="fHealthFailureChanceModifier" type="Float">1</value>
<value name="selCategory" type="UInt32">1</value>
<value hash="E0FF29E0" type="String"></value>

Extra/gadget slot

Base game weapons - xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\
DLC weapons - 3_WeaponProperties.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\

It is possible to add a weapon to an extra slot, sometimes referred to as the gadget slot. This is accessible by pressing the machete button twice. It is only possible to add one weapon to this slot, any more than that and it won’t work properly.

To assign a weapon to the extra slot you need to delete the whole line with the “selCategory” stat in the “CommonProperties” section.

<value name="bSingleHitHealthFailure" type="Bool">False</value>
<value name="fHealthFailureChanceModifier" type="Float">1</value>
<value name="selCategory" type="UInt32">1</value> < Delete this whole line
<value hash="E0FF29E0" type="String"></value>

It should look like this:

<value name="bSingleHitHealthFailure" type="Bool">False</value>
<value name="fHealthFailureChanceModifier" type="Float">1</value>
<value hash="E0FF29E0" type="String"></value>

Guide - Weapon Inspecting

Inputactionmapcommon.xml (\patch_unpack\config\)

To add weapon inspecting we’re going to create a new key binding that links to the “cyclebreaker” signal which causes the weapon idle animations.

Add your extra key bindings to the section under the title - ActionMap name="common_weapons"

You can customise the actual key binding in the “binding input” section and you can choose if you need to press or hold the relative button in the “action” section. My suggested controls for keyboard and gamepad are shown below.

Add this line to the keyboard section:

<Binding input="kb:i" action="press" signal="cyclebreaker"/>

Add this line to the gamepad section:

<Binding input="pad:x" action="hold" signal="cyclebreaker"/>

Guide - Weapon Holstering

There are two known ways of implementing weapon holstering.

The first option is to disable auto draw and add a key binding linked to the built in holster method that would normally trigger when entering buildings. This is the way Far Cry 2: Redux does holstering. Doing this means that whenever your characters put their weapon away they won’t automatically get it back out. It is an extensive change as while your character won’t automatically draw their weapon after leaving a building or exiting a vehicle, they also won’t do so after throwing a grenade. This is a much simpler way of implementing holstering but has the drawbacks of requiring a new game to take effect and your character maybe putting their weapon away when you may not want them to.

The second option is to create a new holstered state, add a key binding linked to the new state and then edit some weapon animations to fix visual bugs. This is the way I have done holstering with Far Cry 2: Vanilla+. Doing this means that regular gameplay is untouched and holstering can be triggered only when the player wants. This method does not require a new game to take effect but is much more complicated to set up. You must also unholster your weapons before entering buildings, so to enter a building while holstered you need to press the use button twice.

Option 1 - Disabling Auto Draw

Step 1: Disabling Auto Draw

xx_player.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated)

Each playable character has their own section of this file, these are the entry titles:

- MainCharacter.PawnPlayer.Andre_Hyppolite
- MainCharacter.PawnPlayer.Frank_Bilders
- MainCharacter.PawnPlayer.Hakim_Echebbi
- MainCharacter.PawnPlayer.Josip_Idromeno
- MainCharacter.PawnPlayer.Marty_Alencar
- MainCharacter.PawnPlayer.Paul_Ferenc
- MainCharacter.PawnPlayer.Quarbani_Singh
- MainCharacter.PawnPlayer.Warren_Clyde
- MainCharacter.PawnPlayer.Xianyong_Bai

Auto draw is controlled by the “bAutoDraw” stat in the “Inventory” section. Enable or disable it by changing the value to “True” or “False”.

```
<object type="Inventory">
  <value hash="8C965C28" type="String">player</value>
  <value name="packInventoryPack" type="Hash">98197A65</value>
  <value name="archGPSVehicleArchetype" type="String">gadgets.Equipped.Compass_Vehicle</value>
  <value name="bUnlimitedAmmo" type="Bool">False</value>
  <value name="bAutoReload" type="Bool">True</value>
  <value name="bAutoDraw" type="Bool">True</value>
  <value hash="130CDED8" type="String">hand_hand</value>
  <value name="sInitialWeaponCategory" type="Hash">E97A284A</value>
</object>
```

(Optional) Step 2: Adding auto-draw to particular actions

It’s possible to add auto-draw to individual actions. This involves rerouting the animations so that rather than an action animation flowing straight into the idle animation it instead flows into the weapon draw animation and then the idle animation.

In practice this means replacing “Pawn Weapons/External States/Main Avatar/Common/xIdle” with “Pawn Weapons/Weapon Mechanics/States/Drawing” as the “Connection Target” within each animation. There can be variations on the Idle animation title depending on what file you’re in, but it will always contain “External States/Main Avatar/Common/xIdle”.

For example, the grenade throwing animation is below, with the full title “<State FullName="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Throwing grenade" Type="CGOStateEquipment">”.

```
<State FullName="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Throwing grenade" Type="CGOStateEquipment">
  <Parameter Name="groups" />
  <Parameter Name="duration" Value="0" />
  <Parameter Name="signalpriorities" />
  <Parameter Name="forceAnim" Value="0" />
  <Parameter Name="syncAnimDuration" Value="0" />
  <Parameter Name="animStatelD" Value="0" />
  <Parameter Name="layerStatelD" Value="Pawn_Generic_Throw_Layered" />
  <Parameter Name="gestureStatelD" Value="0" />
  <Parameter Name="followTerrain" Value="0" />
  <Parameter Name="MoveLayer" Value="-1" />
  <Parameter Name="autosetDuration" Value="0" />
  <Parameter Name="syncWith" Value="0" />
  <Connection Target="::Pawn Weapons/External States/Main Avatar/Common/xIdle" />
  <Event Name="Throw" Type="CGOStateEventPawn" Start="25" End="25">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="1" />
    <Parameter Name="triggeredOnEnd" Value="0" />
    <Parameter Name="triggeredOnBegin" Value="0" />
    <Parameter Name="requestType" Value="11" />
    <Parameter Name="simpleEventID" Value="" />
  </Event>
```

```
<Sink Name="abort" Start="0" End="100">
    <Connection Target="::Pawn Weapons/External States/Main Avatar/Common/xIdle" Signal="abort" />
</Sink>
</State>
```

We are going to replace “Pawn Weapons/External States/Main Avatar/Common/xIdle” with “Pawn Weapons/Weapon Mechanics/States/Drawing” so that it looks like this:

```
<State FullName="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Throwing grenade" Type="CGOStateEquipment">
    <Parameter Name="groups" />
    <Parameter Name="duration" Value="0" />
    <Parameter Name="signalpriorities" />
    <Parameter Name="forceAnim" Value="0" />
    <Parameter Name="syncAnimDuration" Value="0" />
    <Parameter Name="animStateID" Value="0" />
    <Parameter Name="layerStateID" Value="Pawn_Generic_Throw_Layered" />
    <Parameter Name="gestureStateID" Value="0" />
    <Parameter Name="followTerrain" Value="0" />
    <Parameter Name="MoveLayer" Value="-1" />
    <Parameter Name="autosetDuration" Value="0" />
    <Parameter Name="syncWith" Value="0" />
    <Connection Target="::Pawn Weapons/Weapon Mechanics/States/Drawing" />
    <Event Name="Throw" Type="CGOStateEventPawn" Start="25" End="25">
        <Parameter Name="alwaysTrigger" Value="0" />
        <Parameter Name="triggerOnce" Value="1" />
        <Parameter Name="triggeredOnEnd" Value="0" />
        <Parameter Name="triggeredOnBegin" Value="0" />
        <Parameter Name="requestType" Value="11" />
        <Parameter Name="simpleEventID" Value="" />
    </Event>
    <Sink Name="abort" Start="0" End="100">
        <Connection Target="::Pawn Weapons/External States/Main Avatar/Common/xIdle" Signal="abort" />
    </Sink>
</State>
```

The weapon drawing animation as default flows into the idle animation so this is now complete for throwing grenades.

Below I will list the different animations that I have found that can have auto draw added to them. These will be shown with their titles and the animation file that contains them.

Weapons.gosm.xml (\patch_unpack\scripts\engine\objects\pawn\statemachine\)

Throwing grenades

```
<State FullName="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Throwing grenade" Type="CGOStateEquipment">
```

Leaving a mounted weapon (This has a weird bug where you will be changed to the next weapon when leaving the weapon - not recommended)

```
<State FullName="::Pawn Weapons/Weapon Mechanics/States/Mounted weapons/GetOutMountedWeapon" Type="CGOStateAnim">
```

Healing.gosm.xml (\patch_unpack\scripts\game\objects\pawn\statemachine\)

Healing (with syrettes)

```
<State FullName="::Healing/Healing/States/UseSyringe" Type="CGOStateAnim">
```

Healing (emergency healing)

```
<State FullName="::Healing/Healing/States/Healing" Type="CGOStateAnim">
```

Waking up after collapsing in the desert

```
<State FullName="::Healing/Desert/CollapseWakeUp" Type="CGOStateAnim">
```

Vehicles.gosm.xml (\patch_unpack\scripts\engine\objects\pawn\statemachine\)

Exiting vehicles

```
<State FullName="::Vehicles/Vehicles/States/ExitingVehicle" Type="CGOStateExitVehicle">
```

Exiting vehicles in motion

```
<State FullName="::Vehicles/Vehicles/States/JumpOutOfVehicle" Type="CGOStateExitVehicle">
```

Exiting a hang glider in the air

```
<State FullName="::Vehicles/Vehicles/States/ParagliderFallout" Type="CGOStateAnim">
```

Repairing vehicles

```
<State FullName="::Vehicles/Vehicles/States/RepairToldle" Type="CGOStateAnim">
```

Interactions.gosm.xml (\patch_unpack\scripts\game\objects\pawn\statemachine\)

Exiting buildings
<State FullName="::Interactions/Door/ExitWeaponSafeMode" Type="CGOStateAnim">

Collecting diamonds
<State FullName="::Interactions/Diamonds/BriefcaseLookDiamond" Type="CGOStateAnim">

Collecting syrettes
<State FullName="::Interactions/MedicStation/States/PickSyringeGrab" Type="CGOStateAnim">

Exiting ladders (top)
<State FullName="::Interactions/Ladder/States/GetOutLadderTop" Type="CGOStateLadderTransition">

Exiting ladders (bottom)
<State FullName="::Interactions/Ladder/States/GetOutLadderBottom" Type="CGOStateLadderTransition">

Climbing out of water
<State FullName="::Interactions/GetOutWater/States/JumpOutWater" Type="CGOStateAnim">

(Optional) Step 3 - Adding a key to trigger unholstering
Weapons.gosm.xml (\patch_unpack\scripts\engine\objects\pawn\statemachine\)

To add a key that will trigger unholstering, first find the section with the title “<Group FullName="::Pawn Weapons/Weapon Mechanics/States/AllowWeaponSwitch" Type="BaseGroup">”.

Within that section is a subsection that looks like this:

```
<Event Name="Try draw" Type="CGOStateEventInventory" Start="0" End="100" Signal="drawweapon">
  <Parameter Name="alwaysTrigger" Value="0" />
  <Parameter Name="triggerOnce" Value="0" />
  <Parameter Name="triggeredOnEnd" Value="0" />
  <Parameter Name="triggeredOnBegin" Value="0" />
  <Parameter Name="requestType" Value="5" />
  <Parameter Name="simpleEventID" Value="" />
</Event>
```

Copy and paste this section directly below the existing one. You can now edit the “signal” value to any of the signal values found in “inputactionmapcommon.xml” (\patch_unpack\config\).

For example, if you wanted to make pressing the fire button unholster your weapon, you would add the “startshooting” signal, so your section would look like this:

```
<Event Name="Try draw" Type="CGOStateEventInventory" Start="0" End="100" Signal="startshooting">
  <Parameter Name="alwaysTrigger" Value="0" />
  <Parameter Name="triggerOnce" Value="0" />
  <Parameter Name="triggeredOnEnd" Value="0" />
  <Parameter Name="triggeredOnBegin" Value="0" />
  <Parameter Name="requestType" Value="5" />
  <Parameter Name="simpleEventID" Value="" />
</Event>
```

Step 4: Adding the key binding
inputactionmapcommon.xml (\patch_unpack\config\)

To add weapon holstering we’re going to create a new key binding that links to the “holsterweapon” signal which normally holsters weapons when entering buildings etc.

Add your extra key bindings to the section under the title - ActionMap name="common_weapons"

You can customise the actual key binding in the “binding input” section and you can choose if you need to press or hold the relative button in the “action” section. My suggested controls for keyboard and gamepad are shown below.

Add this line to the keyboard section:

<Binding input="kb:x" action="press" signal="holsterweapon"/>

Add this line to the gamepad section:

<Binding input="pad:y" action="hold" signal="holsterweapon"/>

(Optional) Step 5: Making the new key binding rebindable

Adding the key binding to the default controls list
defaultusercontrols.xml (\patch_unpack\config\)

To add the new key binding to the “Actions” in-game controls menu add the following line to the “CATEGORY_ACTIONS” section:

<Control name="inspect" key1="kb:i" actionmap="common_inspect_remap" group="1" conflictmask="12"/>

The completed section should look like this:

```
<Category name="CATEGORY_ACTIONS">
    <Control name="fire" key1="mouse:lb" actionmap="common_shoot_remap" group="-1" conflictmask="-1"/>
    <Control name="ironsight" key1="mouse:rb" actionmap="common_iron_remap" group="-1" conflictmask="-1"/>
    <Control name="reload" key1="kb:r" actionmap="common_reload_remap" group="1" conflictmask="12"/>
    <Control name="inspect" key1="kb:i" actionmap="common_inspect_remap" group="1" conflictmask="12"/>
    <Control name="sprint" key1="kb:lshift" actionmap="common_move_remap" group="1" conflictmask="12"/>
    <Control name="jump" key1="kb:space" actionmap="common_jump_remap" group="1" conflictmask="12"/>
    <Control name="crouch" key1="kb:c" actionmap="common_crouch_remap" group="1" conflictmask="12"/>
    <Control name="interact" key1="kb:e" actionmap="common_use_remap" group="1" conflictmask="12"/>
</Category>
```

Link the changes to the default controls to the controls system

Inputactionmapcommon.xml (\patch_unpack\config\)

To link our changes to the controls system add the following line below the “common_weapons” title:

```
<Import actionmap="common_inspect_remap" optional=""/>
```

The completed section should look like this:

```
<ActionMap name="common_weapons">
<Import actionmap="common_weapons_remap" optional=""/>
<Import actionmap="common_shoot_remap" optional=""/>
<Import actionmap="common_iron_remap" optional=""/>
<Import actionmap="common_reload_remap" optional=""/>
<Import actionmap="common_inspect_remap" optional=""/>
```

Add a new control label

\patch_pack\languages\ - Each language has its own folder and “oasisstrings.rml” file.

Find the section with the title “<section name="Actions">”.

Add the following line into this section, with the correct word for your language in the “value” section:

```
<string enum="inspect" value="Inspect" />
```

Option 2 - New holstered state

Step 1: Linking the holstered state to the ‘Idle’ state

main_avater.gosm.xml (\patch_unpack\scripts\engine\objects\pawn\statemachine\)

Find the section of this file with the following title: <State FullName="::Main Avatar/Common/Idle" Type="CGOStateAnim">

This is the idle state, so when not in a building or vehicle, just walking around like usual. We want holstering to be triggered from this state so we’re going to add that to it.

- 1. Find the section with the title “Main Avatar/Common/Idle” and add the following lines to the bottom of it:

```
<Sink Name="HolsterWeapons" Start="0" End="100">
    <Connection Target="::Pawn Weapons/Weapon Mechanics/States/HolsterWeapons" Signal="HolsterWeapons" />
</Sink>
```

Your completed section should look like this:

```
<State FullName="::Main Avatar/Common/Idle" Type="CGOStateAnim">
    <Parameter Name="groups">
        <Parameter Name="0" Value="Idle" />
        <Parameter Name="1" Value="can_ironsight" />
    </Parameter>
    <Parameter Name="duration" Value="0" />
    <Parameter Name="signalpriorities" />
    <Parameter Name="forceAnim" Value="0" />
    <Parameter Name="syncAnimDuration" Value="0" />
    <Parameter Name="animStatelD" Value="Pawn_Generic_Movement" />
    <Parameter Name="layerStatelD" Value="Pawn_Generic_Aim" />
    <Parameter Name="gestureStatelD" Value="0" />
    <Parameter Name="followTerrain" Value="0" />
    <Parameter Name="MoveLayer" Value="-1" />
    <Sink Name="Slide" Start="0" End="100">
        <Connection Target="::Main Avatar/Common/Slide/StartSliding" Signal="start_sliding" />
    </Sink>
    <Sink Name="random idle" Start="0" End="100">
```

```
<Connection Target="::Main Avatar/Common/IdleCycleBreaker" Signal="cyclebreaker" />
</Sink>
<Sink Name="HolsterWeapons" Start="0" End="100">
    <Connection Target="::Pawn Weapons/Weapon Mechanics/States/HolsterWeapons" Signal="HolsterWeapons" />
</Sink>
</State>
```

Step 2: Creating a new holstered state

main_avater.gosm.xml (\patch_unpack\scripts\engine\objects\pawn\statemachine\)

Paste the following directly below the idle section that we edited in the previous step. This is the holstered state which includes being able go from holstered to doing every other action like driving and healing etc:

```
<State FullName="::Main Avatar/Common/WeaponsHolsteredState" Type="CGOStateAnim">
    <Parameter Name="groups">
        <Parameter Name="0" Value="IdleCycleBreaker" />
        <Parameter Name="1" Value="can_iron sight" />
    </Parameter>
    <Parameter Name="duration" Value="0" />
    <Parameter Name="signalpriorities" />
    <Parameter Name="forceAnim" Value="0" />
    <Parameter Name="syncAnimDuration" Value="0" />
    <Parameter Name="animStateID" Value="Pawn_Generic_Movement" />
    <Parameter Name="layerStateID" Value="Pawn_Generic_Wait" />
    <Parameter Name="gestureStateID" Value="0" />
    <Parameter Name="followTerrain" Value="0" />
    <Parameter Name="MoveLayer" Value="-1" />
    <Connection Target="::Main Avatar/Common/Idle" />
        <Event Name="try heal" Type="CGOStateEventHeal" Start="0" End="100" Signal="heal">
            <Parameter Name="alwaysTrigger" Value="0" />
            <Parameter Name="triggerOnce" Value="0" />
            <Parameter Name="triggeredOnEnd" Value="0" />
            <Parameter Name="triggeredOnBegin" Value="0" />
            <Parameter Name="requestType" Value="0" />
        </Event>
    <Sink Name="heal wound" Start="0" End="100">
        <Connection Target="::Healing/Healing/States/Entering Healing" Signal="heal_now" />
    </Sink>
    <Sink Name="apply syringe" Start="0" End="100">
        <Connection Target="::Healing/Healing/States/SyringeHolster" Signal="apply_syringe" />
    </Sink>
    <Event Name="Try Use" Type="CGOStateEventPawn" Start="0" End="100" Signal="use">
        <Parameter Name="alwaysTrigger" Value="0" />
        <Parameter Name="triggerOnce" Value="0" />
        <Parameter Name="triggeredOnEnd" Value="0" />
        <Parameter Name="triggeredOnBegin" Value="0" />
        <Parameter Name="requestType" Value="1" />
        <Parameter Name="simpleEventID" Value="" />
    </Event>
    <Event Name="Try use mounted weapon" Type="CGOStateEventEquipment" Start="0" End="100" Signal="use_mounted_weapon">
        <Parameter Name="alwaysTrigger" Value="0" />
        <Parameter Name="triggerOnce" Value="0" />
        <Parameter Name="triggeredOnEnd" Value="0" />
        <Parameter Name="triggeredOnBegin" Value="0" />
        <Parameter Name="requestType" Value="21" />
    </Event>
    <Sink Name="use mounted weapon" Start="0" End="100">
        <Connection Target="::Pawn Weapons/Weapon Mechanics/States/Mounted weapons/GetInMountedWeapon" Signal="force_use_mounted_weapon" />
    </Sink>
    <Event Name="entervehicle" Type="CGOStateEventVehicle" Start="0" End="100" Signal="entervehicle_new">
        <Parameter Name="alwaysTrigger" Value="0" />
        <Parameter Name="triggerOnce" Value="0" />
        <Parameter Name="triggeredOnEnd" Value="0" />
        <Parameter Name="triggeredOnBegin" Value="0" />
        <Parameter Name="requestType" Value="6" />
    </Event>
    <Sink Name="enter vehicle" Start="0" End="100">
        <Connection Target="::Vehicles/Vehicles/States/Holster" Signal="entervehicle_now" />
    </Sink>
    <Event Name="Try throw grenade" Type="CGOStateEventPawn" Start="0" End="100" Signal="throw_grenade">
        <Parameter Name="alwaysTrigger" Value="0" />
        <Parameter Name="triggerOnce" Value="0" />
        <Parameter Name="triggeredOnEnd" Value="0" />
        <Parameter Name="triggeredOnBegin" Value="0" />
        <Parameter Name="requestType" Value="10" />
        <Parameter Name="simpleEventID" Value="" />
    </Event>
    <Sink Name="Throw grenade - player" Start="0" End="100">
        <Connection Target="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Lowering arms" Signal="throw_player" />
    </Sink>
    <Sink Name="Slide" Start="0" End="100">
        <Connection Target="::Main Avatar/Common/Slide/StartSliding" Signal="start_sliding" />
    </Sink>
    <Sink Name="pickup" Start="0" End="100">
        <Connection Target="::Interactions/Pickup/Grab" Signal="pickup_weapon" />
    </Sink>
    <Sink Name="pickup from pile" Start="0" End="100">
```

```
<Connection Target="::Interactions/Pickup/GrabAndReload" Signal="pickup_and_reload" />
</Sink>
<Sink Name="pick syringe" Start="0" End="100">
    <Connection Target="::Interactions/MedicStation/States/PickSyringeHolster" Signal="pickup_syringe" />
</Sink>
<Sink Name="open briefcase" Start="0" End="100">
    <Connection Target="::Interactions/Diamonds/HolsterBriefcase" Signal="open_briefcase" />
</Sink>
<Sink Name="Get In Top" Start="0" End="100">
    <Connection Target="::Interactions/Ladder/States/GetInLadderTop" Signal="GetOnLadderTop" />
</Sink>
<Sink Name="Get In Bottom" Start="0" End="100">
    <Connection Target="::Interactions/Ladder/States/GetInLadderBottom" Signal="GetOnLadderBottom" />
</Sink>
<Sink Name="Get In Water" Start="0" End="100">
    <Connection Target="::Interactions/Ladder/States/GetInLadderWater" Signal="GetOnLadderWater" />
</Sink>
<Sink Name="abort breaker" Start="0" End="100">
    <Connection Target="::Main Avatar/Common/Idle" Signal="startshooting" />
</Sink>
<Sink Name="abort breaker" Start="0" End="100">
    <Connection Target="::Main Avatar/Common/Idle" Signal="use" />
</Sink>
</State>
```

Step 3: Creating a new holstering animation system
weapons.gosm.xml (\patch_unpack\scripts\engine\objects\pawn\statemachine\)

We are going to create a new holstering animation system which we can link to our new holstered state.

1. Find the section with the title “Pawn Weapons/Weapon Mechanics/States/Holstering”. Copy and paste this section so you have two identical sections one above the other. Make sure to maintain the same formatting.
2. We’re going to make edits to one of these, it doesn’t matter which but I did the top one. Change the full title to this:

```
<State FullName="::Pawn Weapons/Weapon Mechanics/States/HolsterWeapons" Type="CGOStateAnim">
```

3. Now find the following line:

```
<Connection Target="::Pawn Weapons/External States/Main Avatar/Common/xIdle" />
```

We are going to edit this to point to our holstered state:

```
<Connection Target="::Main Avatar/Common/WeaponsHolsteredState" />
```

Your completed section should look like this:

```
<State FullName="::Pawn Weapons/Weapon Mechanics/States/HolsterWeapons" Type="CGOStateAnim">
    <Parameter Name="groups" />
    <Parameter Name="duration" Value="0" />
    <Parameter Name="signalpriorities" />
    <Parameter Name="forceAnim" Value="0" />
    <Parameter Name="syncAnimDuration" Value="0" />
    <Parameter Name="animStateID" Value="0" />
    <Parameter Name="layerStateID" Value="Pawn_Generic_Holster" />
    <Parameter Name="gestureStateID" Value="-2" />
    <Parameter Name="followTerrain" Value="0" />
    <Parameter Name="MoveLayer" Value="-1" />
    <Connection Target="::Main Avatar/Common/WeaponsHolsteredState" />
    <Event Name="Holster" Type="CGOStateEventInventory" Start="100" End="100">
        <Parameter Name="alwaysTrigger" Value="1" />
        <Parameter Name="triggerOnce" Value="1" />
        <Parameter Name="triggeredOnEnd" Value="1" />
        <Parameter Name="triggeredOnBegin" Value="0" />
        <Parameter Name="requestType" Value="4" />
        <Parameter Name="simpleEventID" Value="" />
    </Event>
</State>
```

Step 4: Linking the holstered state to the weapons system
weapons.gosm.xml (\patch_unpack\scripts\engine\objects\pawn\statemachine\)

We are going to add our holstered state to the game’s pre-existing systems that decide what actions can be performed within all of the game’s states.

This involves adding the following line throughout “weapons.gosm.xml”:

```
<StateRef Path="::Main Avatar/Common/WeaponsHolsteredState" />
```

We are going to add it to the sections with the following titles:

```
<Group FullName="::Pawn Weapons/Weapon Mechanics/Allow Gadget Use" Type="BaseGroup">

<Group FullName="::Pawn Weapons/Weapon Mechanics/CanSprintGroup" Type="BaseGroup">

<Group FullName="::Pawn Weapons/Weapon Mechanics/States/AllowWeaponSwitch" Type="BaseGroup">

<Group FullName="::Pawn Weapons/Weapon Mechanics/States/MapCompass/AllowMapCompass" Type="BaseGroup">
```

Add our line to the lists directly underneath these titles. It’s the same for each and here is an example of what it should look like:

```
<Group FullName="::Pawn Weapons/Weapon Mechanics/Allow Gadget Use" Type="BaseGroup">
    <StateRef Path="::Pawn Weapons/External States/Main Avatar/Common/xIdle" />
    <StateRef Path="::Pawn Weapons/External States/Main Avatar/Common/xIdleCycleBreaker" />
    <StateRef Path="::Main Avatar/Common/WeaponsHolsteredState" />
```

Step 5: Adding the key binding

inputactionmapcommon.xml (\patch_unpack\config\)

To add weapon holstering we’re going to create a new key binding that links to the “HolsterWeapons” signal we created in step 2.

Add your extra key bindings to the section under the title: <ActionMap name="common_weapons">

You can customise the actual key binding in the “binding input” section and you can choose if you need to press or hold the relative button in the “action” section. My suggested controls for keyboard and gamepad are shown below.

Add this line to the keyboard section:

```
<Binding input="kb:x" action="press" signal="Holsterweapons"/>
```

Add this line to the gamepad section:

```
<Binding input="pad:y" action="hold" signal="Holsterweapons"/>
```

(Optional) Step 6: Making the new key binding rebindable

Adding the key binding to the default controls list

defaultusercontrols.xml (\patch_unpack\config\)

To add the new key binding to the “Actions” in-game controls menu add the following line to the “CATEGORY_ACTIONS” section:

```
<Control name="holster" key1="kb:x" actionmap="common_holster_remap" group="1" conflictmask="12"/>
```

The completed section should look like this:

```
<Category name="CATEGORY_ACTIONS">
    <Control name="fire" key1="mouse:lb" actionmap="common_shoot_remap" group="-1" conflictmask="-1"/>
    <Control name="ironsight" key1="mouse:rb" actionmap="common_iron_remap" group="-1" conflictmask="-1"/>
    <Control name="reload" key1="kb:r" actionmap="common_reload_remap" group="1" conflictmask="12"/>
    <Control name="holster" key1="kb:x" actionmap="common_holster_remap" group="1" conflictmask="12"/>
    <Control name="sprint" key1="kb:lshift" actionmap="common_move_remap" group="1" conflictmask="12"/>
    <Control name="jump" key1="kb:space" actionmap="common_jump_remap" group="1" conflictmask="12"/>
    <Control name="crouch" key1="kb:c" actionmap="common_crouch_remap" group="1" conflictmask="12"/>
    <Control name="interact" key1="kb:e" actionmap="common_use_remap" group="1" conflictmask="12"/>
</Category>
```

Link the changes to the default controls to the controls system

Inputactionmapcommon.xml (\patch_unpack\config\)

To link our changes to the controls system add the following line below the “common_weapons” title:

```
<Import actionmap="common_holster_remap" optional=""/>
```

The completed section should look like this:

```
<ActionMap name="common_weapons">
<Import actionmap="common_weapons_remap" optional=""/>
<Import actionmap="common_shoot_remap" optional=""/>
<Import actionmap="common_iron_remap" optional=""/>
<Import actionmap="common_reload_remap" optional=""/>
<Import actionmap="common_holster_remap" optional=""/>
```

\patch_pack\languages\ - Each language has its own folder and “oasisstrings.rml” file.

Find the section with the title "<section name='Actions'>".

Add the following line into this section, with the correct word for your language in the “value” section:

```
<string enum="holster" value="Holster" />
```

Step 7: Editing weapon animations

The steps we have already completed are all that is technically required for holstering to work. We are left with a bug though where once holstered 12 of the weapons will still show the players arms as though they are still holding the weapon. This section will fix this.

We are going to need the weapon animation files. These are found for base game weapons by unpacking “worlds.fat/.dat” and then within \worlds_unpack\graphics\characters_common\animations\weapons\. For DLC weapons unpack “entitylibrary.fat/.dat” from \Far Cry 2\Data_Win32\downloadcontent\dlc1\ and then they are found within \entitylibrary_unpack\graphics\characters_common\animations\weapons\dlc\.

1. Get the MGL140 holstering animation file "1stge_uppb_holster_+000fw_prmgl_i1.mab". Open this in your hex editor.
2. Scroll down this file and replace the section I have highlighted in the image below with zeros. Make sure you zeros go into the section on the left.

Startup	1stge_uppb_holster +000fw_prmg1_i1.mab x																															
▼	Edit As: Hex▼				Run Script▼				Run Template▼																							
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0123456789ABCDEF															
03D0h:	02	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....														
03E0h:	8E	DE	7E	3F	47	96	89	3D	17	84	C1	3D	FC	90	DC	BC	Žb~?G-%=.,Á=ü.Ü¼															
03F0h:	00	00	07	00	22	00	00	00	00	00	00	00	00	00	00	00"															
0400h:	02	00	00	00	01	00	52	00	FF	FF	FF	FF	20	9D	72	08	.....R.ÿÿÿÿ.r.														
0410h:	DC	01	00	00	00	00	00	00	CE	CC	4C	3E	3D	12	10	E7	Ü.....îîL>=..ç															
0420h:	6D	67	6C	31	34	30	00	00	00	00	00	00	00	00	00	00	mg1140.....															
0430h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....														
0440h:	F6	15	51	97	52	20	48	61	6E	64	00	00	00	00	00	00	ö.Q-R Hand.....															
0450h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....														
0460h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....														
0470h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....														
0480h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....														
0490h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....														
04A0h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....														
04B0h:	06	00	3A	00	FF	FF	FF	FF	00	D3	62	1B	50	02	00	00	...:ÿÿÿÿ.ób.P...															
04C0h:	00	00	00	00	CE	CC	4C	3E	3D	12	10	E7	6D	67	6C	31	...îîL>=..çmg11															
04D0h:	34	30	00	00	00	00	00	00	00	00	00	00	00	00	00	00	40.....															
04E0h:	00	00	00	00	00	00	00	00	00	00	00	00	1D	76	8D	AE	.....v.®														
04F0h:	4C	20	48	61	6E	64	00	00	00	00	00	00	00	00	00	00	L Hand.....															
0500h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....														
0510h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....														
0520h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....														
0530h:	00	00	00	00	1D	76	8D	AE	4C	20	48	61	6E	64	00	00	.....v.®L Hand..														
0540h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....														
0550h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....														
0560h:	CD	CC	CC	3D	02	00	00	00	66	00	00	00	00	6E	62	43	46	îîî=...f...nbCF														
0570h:	02	00	00	00	01	00	00	00	00	00	00	00	00	82	8A	C5	.....,Š														
0580h:	65	08	32	4B	53	60	0A	50	6C	61	79	53	6F	75	6E	64	e.2KS`.PlaySound															
0590h:	00	27	B0	F9	83	04	01	00	00	00	57	58	C3	DC	08	FF	. 'òf.....wxÄÜ.ÿ															
05A0h:	FF	FF	FF	FF	FF	FF	FF	73	28	7C	F0	0B	30	78	30	30	ÿÿÿÿÿÿÿÿ(|ð.0x00															
05B0h:	34	42	36	37	43	45	00	D2	B9	76	F1	04	08	00	00	00	4B67CE.ò¹vf.....															
05C0h:	DA	48	46	AA	01	00	14	27	AB	4E	01	01	98	79	12	2E	ÚHFª.....'«N..ÿ..															
05D0h:	01	01	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....														
05E0h:	0F	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....														
05F0h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....														

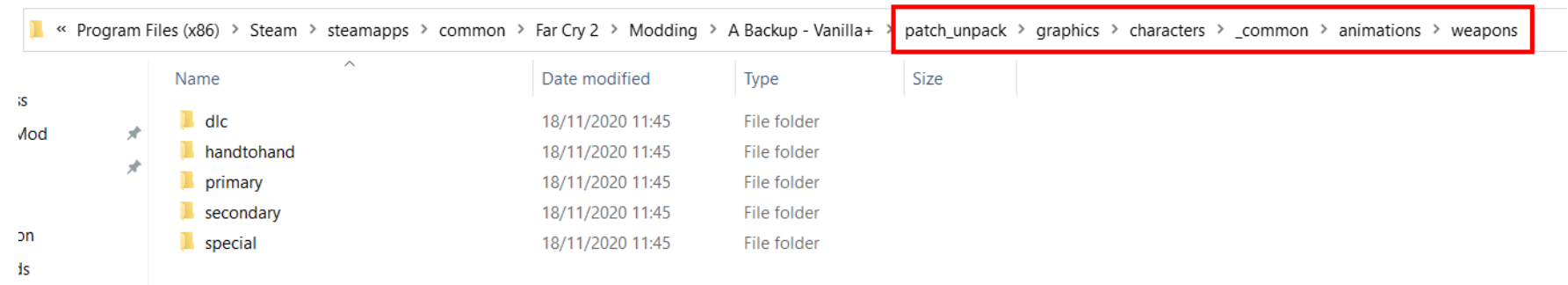
Your completed file should look like this:

Startup	1stge_uppb_holster_+000fw_prmg1_i1.mab* x																
▼	Edit As: Hex▼				Run Script▼				Run Template▼								
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0123456789ABCDEF
03D0h:	02	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
03E0h:	8E	DE	7E	3F	47	96	89	3D	17	84	C1	3D	FC	90	DC	BC	Žb~?G-‰=.,,Á=ü.Ü¼
03F0h:	00	00	07	00	22	00	00	00	00	00	00	00	00	00	00	00"
0400h:	02	00	00	00	01	00	52	00	FF	FF	FF	FF	20	9D	72	08	.....R.yyyy.r.
0410h:	DC	01	00	00	00	00	00	00	CE	CC	4C	3E	3D	12	10	E7	Ü.....îîL>=..ç
0420h:	6D	67	6C	31	34	30	00	00	00	00	00	00	00	00	00	00	mg1140.....
0430h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
0440h:	F6	15	51	97	52	20	48	61	6E	64	00	00	00	00	00	00	ö.Q-R Hand.....
0450h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
0460h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
0470h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
0480h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
0490h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
04A0h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
04B0h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
04C0h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
04D0h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
04E0h:	00	00	00	00	00	00	00	00	00	00	00	00	1D	76	8D	AE	.....v.®
04F0h:	4C	20	48	61	6E	64	00	00	00	00	00	00	00	00	00	00	L Hand.....
0500h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
0510h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
0520h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
0530h:	00	00	00	00	1D	76	8D	AE	4C	20	48	61	6E	64	00	00	.....v.©L Hand..
0540h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
0550h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
0560h:	CD	CC	CC	3D	02	00	00	00	66	00	00	00	6E	62	43	46	îîî=....f...nbCF
0570h:	02	00	00	00	01	00	00	00	00	00	00	00	00	82	8A	C5	.....,ŠA
0580h:	65	08	32	4B	53	60	0A	50	6C	61	79	53	6F	75	6E	64	e.2KS`.PlaySound
0590h:	00	27	B0	F9	83	04	01	00	00	00	57	58	C3	DC	08	FF	.'°ûf....wxÄÜ.ý
05A0h:	FF	FF	FF	FF	FF	FF	FF	73	28	7C	F0	0B	30	78	30	3F	yyyyyyys(1ð.0x00
05B0h:	34	42	36	37	43	45	00	D2	B9	76	F1	04	08	00	00	00	4B67CE.ô+vní....
05C0h:	DA	48	46	AA	01	00	14	27	AB	4E	01	01	98	79	12	2E	ÚHFª... '«N..`y..
05D0h:	01	01	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
05E0h:	0F	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....
05F0h:	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	.....

3. Save this file. We are now going to use this file to replace the holstering animations for the following weapons. This will leave the animations looking identical but minimise visual bugs from the holstering. Trust me, I spent a long time experimenting with replacing using different animations and replacing/deleting different parts of the hex.

These are the bugged weapons: MP5, G3KA4, AK47, Ithaca, MGL140, M249 Saw, Dart Rifle, Mortar, Sawed off shotgun, Silenced Shotgun, Crossbow.

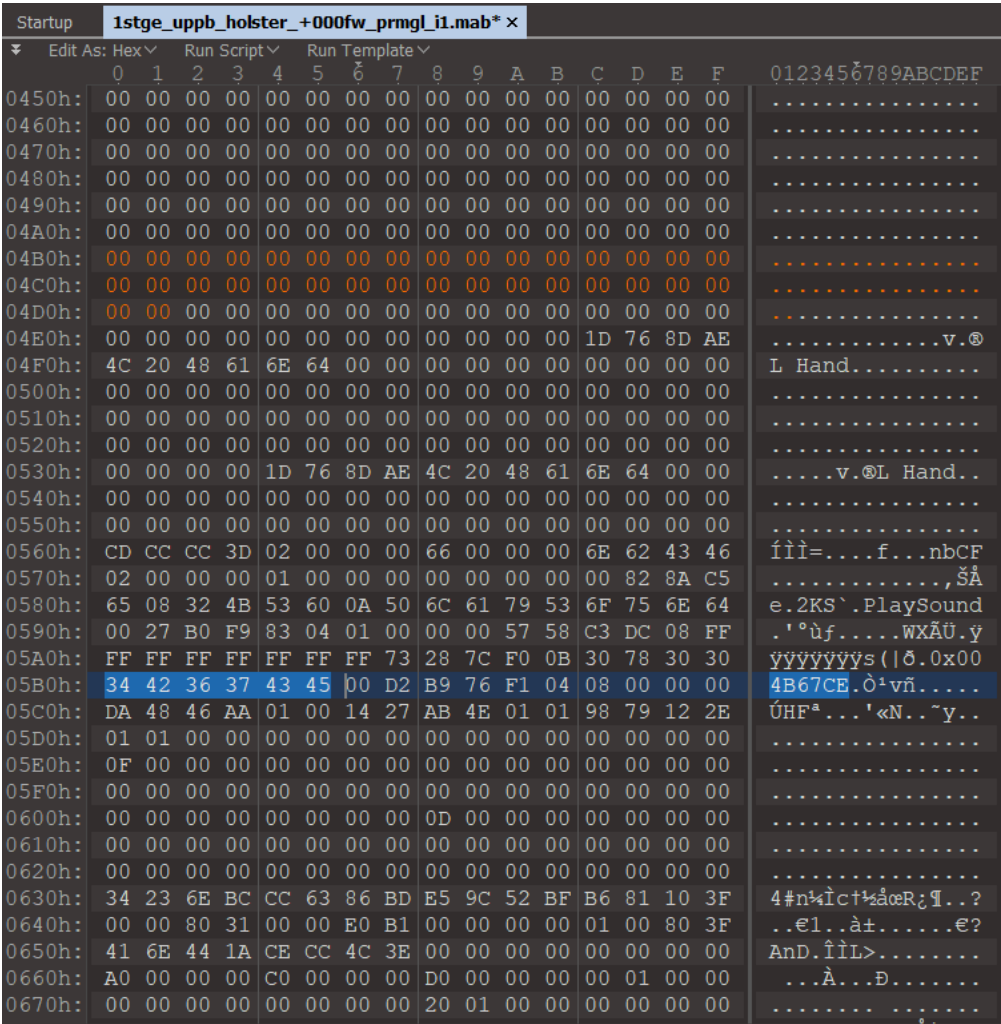
Within \patch_unpack\graphics\characters_common\animations\weapons\ create folders for each weapon type (Secondary, Primary, Special, DLC). They should look like this:



Each weapon has its own folder within these parent folders and you can copy the folder structure and names from where you found the original animations.

Paste our edited MGL140 animation file and copy it into each weapon folder. Then replace it’s name with the filename for each respective weapon’s original holster animation.

4. You can stop here if you want but right now each weapon has the same sound when it is holstered. This sound is specified in a hex string near the bottom of each animation file. You need to open up each weapon’s original holstering animation using your hex editor and copy that string into the same position within each newly created file. I have highlighted the specific string that needs to be changed in the image below:

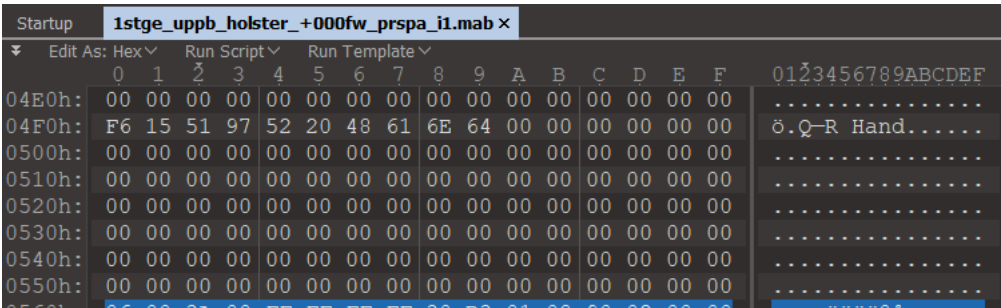


Step 8: Editing the SPAS12 animation

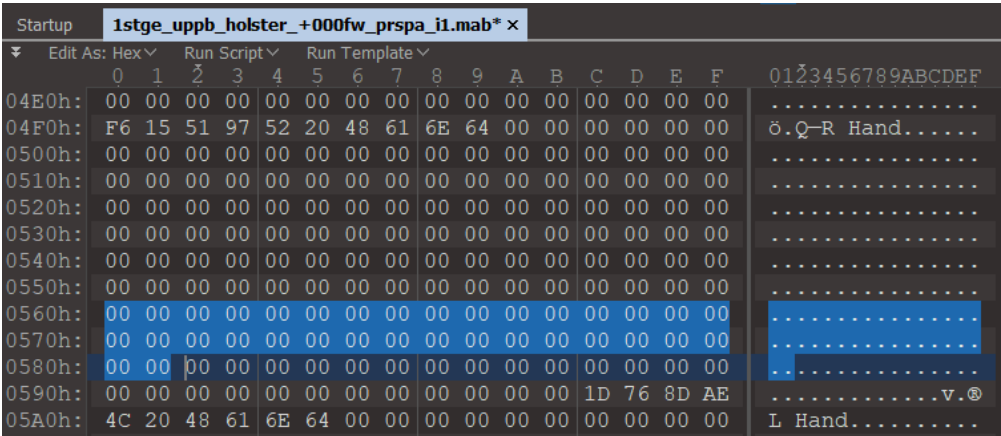
The SPAS12 animation is not fixed by replacing it with the MGL140 animation like the other weapons in the previous step. To fix this we are going to hex edit it’s holstering animation with the exact method we did to the MGL140 animation.

So, find the SPAS12 animation which is called “1stge_uppb_holster_+000fw_prspa_i1.mab” and found within \worlds_unpack\graphics\characters_common\animations\weapons\primary\franchi_spas12\. Paste it into your patch folder within the same folder structure.

Now, open the file with your hex editor. Scroll down this file and replace the section I have highlighted in the image below with zeros. Make sure you zeros go into the section on the left.



Your complete section should look like this:



Guide - Silent Machete Assassinations

Step 1: Making machete assassinations a guaranteed kill

weapons.gosm.xml (patch_unpack\scripts\engine\objects\pawn\statemachine\)

Find these sections:

```
<Sink Name="melee attack success" Start="0" End="100">
    <Connection Target="::Pawn Weapons/Weapon Mechanics/States/Machete/MeleeAttackBegin" Signal="melee_attack_success" />
</Sink>
<Sink Name="melee attack miss" Start="0" End="100">
    <Connection Target="::Pawn Weapons/Weapon Mechanics/States/Machete/MeleeAttackMiss" Signal="melee_attack_miss" />
</Sink>
```

To make successful stealth attacks a guaranteed kill we are going to change the animation to the two handed finishing move by editing the “Connection Target” to “MeleeAttackFinishDouble”. Your completed “melee attack success” section should look like this:

```
<Sink Name="melee attack success" Start="0" End="100">
    <Connection Target="::Pawn Weapons/Weapon Mechanics/States/Machete/MeleeAttackFinishDouble" Signal="melee_attack_success" />
</Sink>
```

You now have the choice to remove the chance for stealthed attacks to miss. There is a rare animation where the enemy will dodge your hit and this can be removed by editing the “melee attack miss” section to this:

```
<Sink Name="melee attack miss" Start="0" End="100">
    <Connection Target="::Pawn Weapons/Weapon Mechanics/States/Machete/MeleeAttackFinishDouble" Signal="melee_attack_success" />
</Sink>
```

Step 2: Making machete assassinations silent

Find “3rdge_uppb_lethalslash_+000fw_hhmac_i1.mab” by unpacking “worlds.fat/.dat” and then within \graphics\characters_common\animations\weapons\handtohand\machete\.

Copy this file into the following directory in your “patch_unpack” folder:
\patch_unpack\graphics\characters_common\animations\weapons\handtohand\machete\sync_finishground\
Create these folders if they are not present.

Rename this file to “3rdge_syms_finishground_+000fw_nowep_i1.mab”.

(Optional) Step 3: Disabling enemy screams

By default the enemies will scream in pain or make dying sounds when you perform an assassination. This screaming can be disabled if it is weird for you that other enemies don’t react to the noise.

- Copy “hmr.gosm.xml” from \worlds_unpack\scripts\game\objects\pawn\statemachine\ and paste it into the same address within your patch folder: \patch_unpack\scripts\game\objects\pawn\statemachine\. Create these folders if they are not present.
- Find and delete this section:

```
<Event Name="DeathBark" Type="CGOStateEventBark" Start="30" End="31">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="1" />
    <Parameter Name="triggeredOnEnd" Value="0" />
    <Parameter Name="triggeredOnBegin" Value="0" />
    <Parameter Name="requestType" Value="0" />
    <Parameter Name="barkEvent" Value="14" />
</Event>
```

(Optional) Step 4: Creeping

Decoding required

Base game weapons - xx_WeaponProperties.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\
DLC weapons - 3_WeaponProperties.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

This feature will make stealth easier when playing using mouse and keyboard because in the vanilla game stealth was designed around being able to walk slowly behind enemies using a controller. By enabling ‘creeping’ you will be able to hold the right mouse button while using the machete to walk at half speed.

There are three machete entries that need to be edited:

WeaponProperties.HandToHand.Machete
WeaponProperties.HandToHand.Machete_HomeMade
WeaponProperties.HandToHand.Machete_Primitive

To create a creeping function we’re going to enable iron sights for the machetes and then edit the iron sights movement speed and FOV.

Find the “IronSight” section for each machete:

```
<object hash="BB04E184" type="IronSight">  
  <value name="fMoveSpeedFactor" hash="7D725133" type="Float">1.0</value> <!-- type="BinHex" value="0000803F" -->  
  <value name="bCanIronsight" hash="E49EEB82" type="Bool">False</value> <!-- type="BinHex" value="00" -->  
  <value name="fLookSensitivityFactor" hash="DD39539B" type="Float">1.0</value> <!-- type="BinHex" value="0000803F" -->  
  <value name="flronsightFOV" hash="FB4ADD00" type="Float">1.308</value> <!-- type="BinHex" value="8B6CA73F" -->
```

To enable iron sights change the “bCanIronSight” stat to “True”.

To decreased iron sight movement speed to 50% change the “fMoveSpeedFactor” stat to “0.5”.

To add a slight zoom when creeping, change the “flronsightFOV” stat to “1.3”.

You can customise the movement speed and FOV settings to your choice, these are my chosen settings:

```
<object hash="BB04E184" type="IronSight">  
  <value name="fMoveSpeedFactor" hash="7D725133" type="Float">0.5</value> <!-- type="BinHex" value="0000003F" -->  
  <value name="bCanIronsight" hash="E49EEB82" type="Bool">True</value> <!-- type="BinHex" value="01" -->  
  <value name="fLookSensitivityFactor" hash="DD39539B" type="Float">1.0</value> <!-- type="BinHex" value="0000803F" -->  
  <value name="flronsightFOV" hash="FB4ADD00" type="Float">1.3</value> <!-- type="BinHex" value="8B6CA73F" -->
```

Guide - Throwing grenades from mounted weapons

This guide will cover enabling throwing grenades from mounted weapons. These are regular mounted weapons, not those on vehicles. This is a smooth addition, the animations all line up well. The only bug with this is that if you try to throw a grenade when you haven’t got any left you will leave the mounted weapon.

Step 1: Creating new grenade throwing entries

weapons.gosm.xml (\patch_unpack\scripts\engine\objects\pawn\statemachine\)

We are going to copy and paste two sections of this file, with these titles:

```
<State FullName="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Lowering arms" Type="CGOStateAnim">  
  
<State FullName="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Throwing grenade" Type="CGOStateEquipment">
```

These sections are next to each other, copy both of them and paste them directly below.

We are now going to rename both of these new sections so these are their titles:

```
<State FullName="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Mounted Weapons Lowering arms" Type="CGOStateAnim">  
  
<State FullName="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Mounted Weapons Throwing grenade" Type="CGOStateEquipment">
```

Now we are going to change the “Connection Target” values of both sections.

The connection target of “Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Driving Lowering arms” is going to be “Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Mounted Weapons Throwing grenade”.

The connection target of “Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Mounted Weapons Throwing grenade” is going to be “Pawn Weapons/Weapon Mechanics/States/Mounted weapons/GetInMountedWeapon”.

We are also going to change the “abort” Connection Target value of “Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Driving Throwing grenade” to “Pawn Weapons/Weapon Mechanics/States/Mounted weapons/GetInMountedWeapon”.

Your complete sections should look like this:

```
<State FullName="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Mounted Weapons Lowering arms" Type="CGOStateAnim">
    <Parameter Name="groups" />
    <Parameter Name="duration" Value="0" />
    <Parameter Name="signalpriorities" />
    <Parameter Name="forceAnim" Value="0" />
    <Parameter Name="syncAnimDuration" Value="0" />
    <Parameter Name="animStatelD" Value="0" />
    <Parameter Name="layerStatelD" Value="Pawn_Generic_Holster" />
    <Parameter Name="gestureStatelD" Value="0" />
    <Parameter Name="followTerrain" Value="0" />
    <Parameter Name="MoveLayer" Value="-1" />
    <Connection Target="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Mounted Weapons Throwing grenade" />
    <Event Name="Select grenade" Type="CGOStateEventInventory" Start="100" End="100">
        <Parameter Name="alwaysTrigger" Value="0" />
        <Parameter Name="triggerOnce" Value="1" />
        <Parameter Name="triggeredOnEnd" Value="0" />
        <Parameter Name="triggeredOnBegin" Value="0" />
        <Parameter Name="requestType" Value="14" />
        <Parameter Name="simpleEventlD" Value="" />
    </Event>
    <Event Name="Backup" Type="CGOStateEventInventory" Start="95" End="95">
        <Parameter Name="alwaysTrigger" Value="0" />
        <Parameter Name="triggerOnce" Value="1" />
        <Parameter Name="triggeredOnEnd" Value="0" />
        <Parameter Name="triggeredOnBegin" Value="0" />
        <Parameter Name="requestType" Value="16" />
        <Parameter Name="simpleEventlD" Value="" />
    </Event>
    <Event Name="Net Throw event" Type="CGOStateEventPawn" Start="0" End="1">
        <Parameter Name="alwaysTrigger" Value="0" />
        <Parameter Name="triggerOnce" Value="0" />
        <Parameter Name="triggeredOnEnd" Value="0" />
        <Parameter Name="triggeredOnBegin" Value="0" />
        <Parameter Name="requestType" Value="12" />
        <Parameter Name="simpleEventlD" Value="event_net_throw_grenade" />
    </Event>
</State>
<State FullName="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Mounted Weapons Throwing grenade" Type="CGOStateEquipment">
    <Parameter Name="groups" />
    <Parameter Name="duration" Value="0" />
    <Parameter Name="signalpriorities" />
    <Parameter Name="forceAnim" Value="0" />
    <Parameter Name="syncAnimDuration" Value="0" />
    <Parameter Name="animStatelD" Value="0" />
    <Parameter Name="layerStatelD" Value="Pawn_Generic_Throw_Layered" />
    <Parameter Name="gestureStatelD" Value="0" />
    <Parameter Name="followTerrain" Value="0" />
    <Parameter Name="MoveLayer" Value="-1" />
    <Parameter Name="autosetDuration" Value="0" />
    <Parameter Name="syncWith" Value="0" />
    <Connection Target="::Pawn Weapons/Weapon Mechanics/States/Mounted weapons/GetlnMountedWeapon" />
    <Event Name="Throw" Type="CGOStateEventPawn" Start="25" End="25">
        <Parameter Name="alwaysTrigger" Value="0" />
        <Parameter Name="triggerOnce" Value="1" />
        <Parameter Name="triggeredOnEnd" Value="0" />
        <Parameter Name="triggeredOnBegin" Value="0" />
        <Parameter Name="requestType" Value="11" />
        <Parameter Name="simpleEventlD" Value="" />
    </Event>
    <Sink Name="abort" Start="0" End="100">
        <Connection Target="::Pawn Weapons/Weapon Mechanics/States/Mounted weapons/GetlnMountedWeapon" Signal="abort" />
    </Sink>
</State>
```

Step 2: Editing the mounted weapon state

weapons.gosm.xml (\patch_unpack\scripts\engine\objects\pawn\statemachine\)

Find the mounted weapon state with this title:

```
<State FullName="::Pawn Weapons/Weapon Mechanics/States/Mounted weapons/UsingMountedWeapon" Type="CGOStateAnim">
```

We are going to add the following section to the bottom of the mounted weapon state:

```
<Sink Name="Throw grenade - Mounted Weapon" Start="0" End="100">
    <Connection Target="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Mounted Weapons Lowering arms" Signal="mounted_weapons_throw_grenade" />
</Sink>
```

Your completed section should look like this:

```
<State FullName="::Pawn Weapons/Weapon Mechanics/States/Mounted weapons/UsingMountedWeapon" Type="CGOStateAnim">
    <Parameter Name="groups" />
```

```
<Parameter Name="duration" Value="0" />
<Parameter Name="signalpriorities" />
<Parameter Name="forceAnim" Value="0" />
<Parameter Name="syncAnimDuration" Value="0" />
<Parameter Name="animStateID" Value="Pawn_Generic_Mounted_BaseLayer" />
<Parameter Name="layerStateID" Value="Pawn_Generic_Mounted" />
<Parameter Name="gestureStateID" Value="Pawn_Generic_Mounted_Gesture" />
<Parameter Name="followTerrain" Value="0" />
<Parameter Name="MoveLayer" Value="-1" />
<Sink Name="leave" Start="0" End="100">
    <Connection Target="::Pawn Weapons/Weapon Mechanics/States/Mounted weapons/GetOutMountedWeapon" Signal="leave_mounted_weapon" />
</Sink>
<Sink Name="Throw grenade - Mounted Weapon" Start="0" End="100">
    <Connection Target="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Mounted Weapons Lowering arms" Signal="mounted_weapons_throw_grenade" />
</Sink>
</State>
```

Step 3: Adding the new grenade throwing entries into the mounted weapon systems

weapons.gosm.xml (\patch_unpack\scripts\engine\objects\pawn\statemachine\)

We are now going to link our new grenade throwing entries into various vehicle systems that allow them to work.

This involves copying the following lines into various lists in this file:

```
<StateRef Path="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Mounted Weapons Lowering arms" />
<StateRef Path="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Mounted Weapons Throwing grenade" />
```

These lists have the following titles, you’ll see that there are already lists there. You simply need to copy the lines above into them:

```
<Group FullName="::Pawn Weapons/Weapon Mechanics/States/Mounted weapons/OnMountedWeapon" Type="BaseGroup">
<Group FullName="::Pawn Weapons/Weapon Mechanics/States/Mounted weapons/MountedWeaponBeautifier" Type="BaseGroup">
<Group FullName="::Pawn Weapons/Weapon Mechanics/States/Mounted weapons/MountedWeaponActionMap" Type="BaseGroup">
```

For example, here is one of the lists with the new lines added:

```
<Group FullName="::Pawn Weapons/Weapon Mechanics/States/Mounted weapons/OnMountedWeapon" Type="BaseGroup">
    <StateRef Path="::Pawn Weapons/Weapon Mechanics/States/Mounted weapons/UsingMountedWeapon" />
    <StateRef Path="::Pawn Weapons/Weapon Mechanics/States/Mounted weapons/MountedFireBullets" />
    <StateRef Path="::Pawn Weapons/Weapon Mechanics/States/Mounted weapons/GetOutMountedWeapon" />
    <StateRef Path="::Pawn Weapons/Weapon Mechanics/States/Mounted weapons/AttachToMounted" />
    <StateRef Path="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Mounted Weapons Lowering arms" />
    <StateRef Path="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Mounted Weapons Throwing grenade" />
```

Step 4: Adding new controls

inputactionmapcommon.xml (\patch_unpack\config\)

Find the section of this file with the title: <ActionMap name="common_using_mounted_weapon">

Copy and paste the following lines into this section, this includes a button to throw a grenade and also swap grenade type:

```
<Binding input="kb:q" action="press" signal="mounted_weapons_throw_grenade"/>
<Binding input="kb:f" action="press" signal="select_next_throw_gadget"/>
<Binding input="pad:right_shoulder" action="press" signal="mounted_weapons_throw_grenade"/>
<Binding input="pad:left" action="press" signal="select_next_throw_gadget"/>
```

Step 5: Make the new controls rebindable

inputactionmapcommon.xml (\patch_unpack\config\)

Controls being rebindable is controlled by the “import actionmap” lines directly below the titles of each section of this file.

As we haven’t added any brand new controls we just need the following line into the “import actionmap” sections of the mounted weapon controls sections:

```
<import actionmap="common_grenade_remap" optional=""/>
```

Your completed passenger section should look like this:

```
<ActionMap name="common_using_mounted_weapon">
    <import actionmap="common_heal_remap" optional=""/>
    <Import actionmap="common_changeseat_remap" optional=""/>
    <import actionmap="common_grenade_remap" optional=""/>
```

Guide - Alternate animations

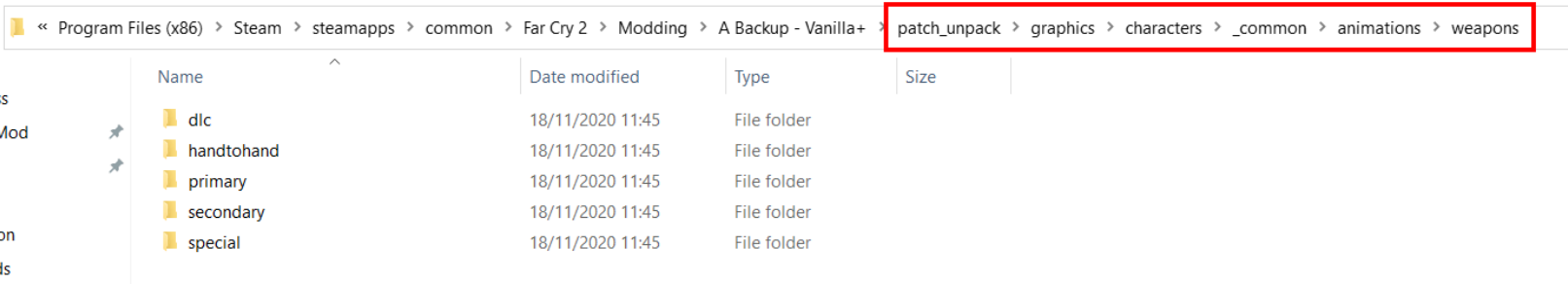
This guide will cover different animations that can be swapped around to alter how the player carries their weapons. You can do this to individual weapons to meet your preference.

To swap around the animations you just need to replace the original animation with the new one, while making sure to give the new file the same filename as the original.

The animation files for all base game weapons can be found in worlds.dat/.fat (\Far Cry 2\Data_Win32\worlds\), within \worlds_unpack\graphics\characters_common\animations\weapons\. The animation files for dlc weapons are found in dlc_jungle.dat/.fat (\Far Cry 2\Data_Win32\downloadcontent\dlc_jungle\), within \dlc_jungle_unpack\graphics\weapons\dlc\.

In these folders you'll see that each weapon has its own folder that contains all the animations for that weapon. The only weapons that are different are the desert eagle, ithaca, m1903 and machete, who's walking animation files can be found in \worlds_unpack\graphics\characters_common\animations\locomotion\stand\walk\.

To replace the existing animation files you need to paste the new animation files into your "patch_unpack" folder, making sure to maintain the existing folder structure. Each category of weapons has its own folder and within your "patch_unpack" folder it should look like this:



Within each weapon's folder you'll find the same animations and below I will outline the more useful ones when it comes to swapping. You'll see that most animations follow the same naming structure but there are some that don't which I will highlight. I'll also go through some suggested swaps but you could be creative here and swap any of the animations around.

Not moving (standing)

- aimcycle (e.g. 1stge_uppb_aimcycle_+000fw_se6p9.mab)
- aimingcycle (desert eagle, ithaca, silenced shotgun - 1stge_uppb_aimingcycle_+000fw_sedea_i1.mab)

Not moving (crouched)

- aimcyclecrh (e.g. 1stge_uppb_aim2ironcrh_+000fw_se6p9_i1.mab)
- aimcrh (m1903 - 1stge_uppb_aimcrh_+000fw_spm19_i1.mab)
- aimcyclec (ak47 - 1stge_uppb_aimcyclec_+000fw_prak4_i1.mab)

Not moving (lowered weapon - safe zone style)

- wsafeidle (e.g. 1stge_uppb_wsafeidle_+000fw_se6p9_i1.mab)

Walking (standing)

- walk (e.g. 1stge_uppb_walk_+000fw_se6p9_i1.mab)
- idle (machete, ied detonator - 1stge_uppb_idle_+000fw_hhmac_i1.mab)

Walking (crouched)

- walkcrh (e.g. 1stge_uppb_walkcrh_+000fw_se6p9_i1)
- walkc (ak47 - 1stge_uppb_walkc_+000fw_prak4_i1.mab)

Walking (lowered weapon - safe zone style)

- wsafewalk (e.g. 1stge_uppb_wsafewalk_+000fw_se6p9_i1.mab)

Aiming (standing)

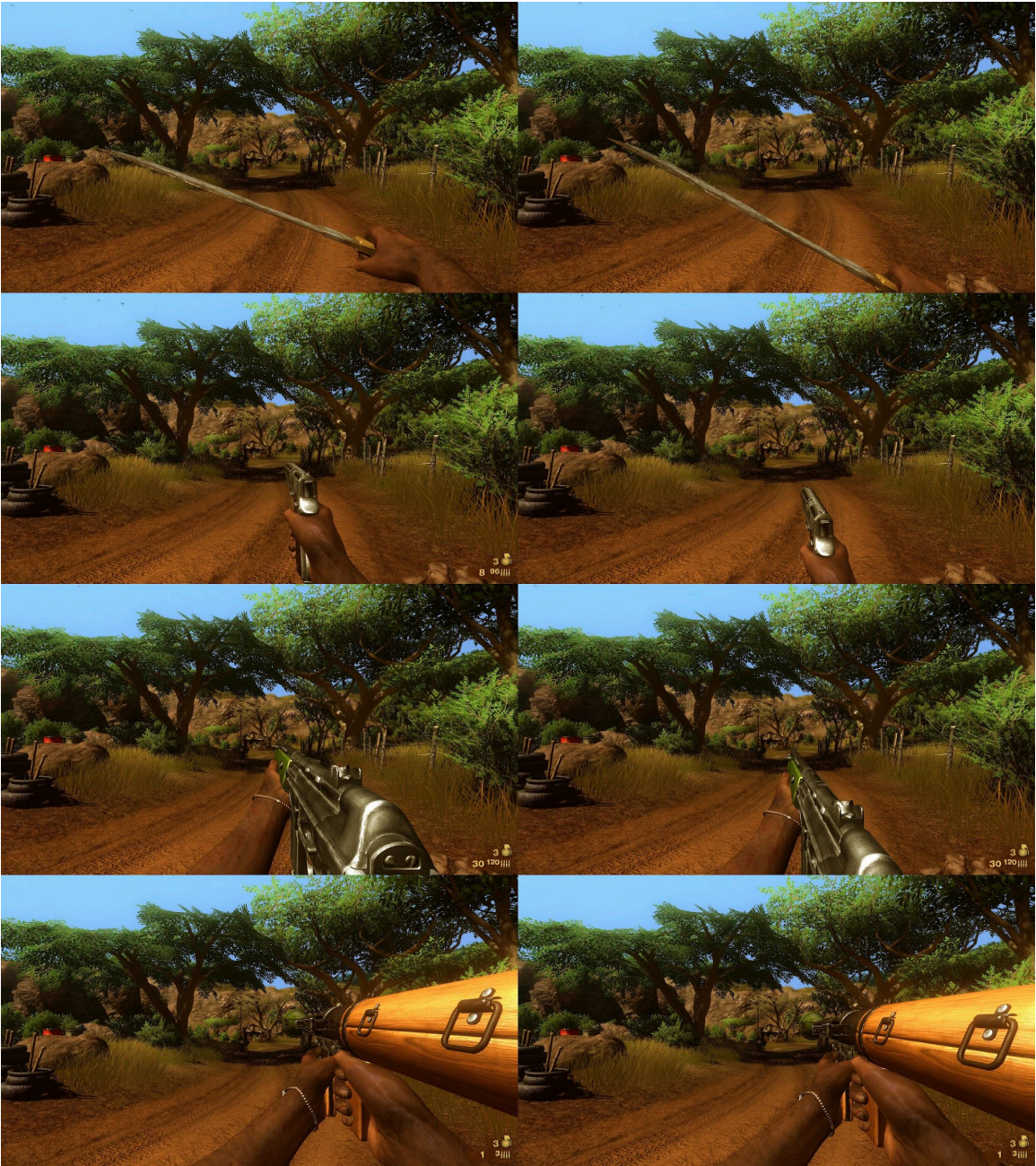
- aim2iron (e.g. 1stge_uppb_aim2iron_+000fw_se6p9_i1.mab)
- regular2ironsight (desert eagle, ithaca, m1903 - 1stge_uppb_regular2ironsight_+000fw_sedea_i1.mab)

Aiming (crouched)

- aim2ironcrh (e.g. 1stge_uppb_aim2ironcrh_+000fw_se6p9_i1.mab)

Option 1 - Carrying weapons lower

This option involves swapping the regular standing animations with the crouched animations, as the player holds their weapons lower when crouching. See below for comparisons, with the new animations on the right:

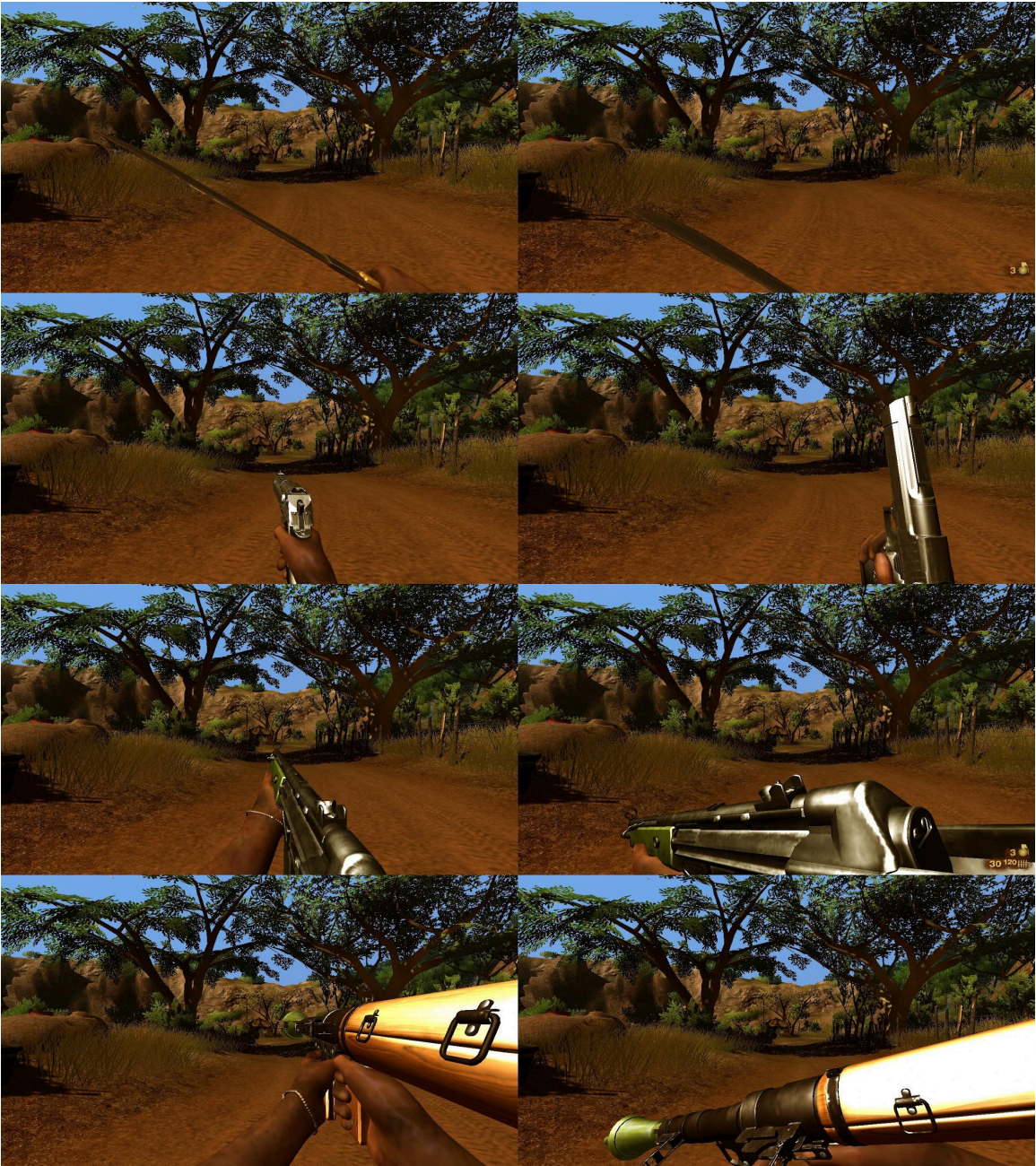


To do this we are going to swap the following animations:

- Replace “Not moving (standing)” with “Not moving (crouched)”
- Replace “Walking (standing)” with “Walking (crouched)”
- Replace “Aiming (standing)” with “Aiming (crouched)”

Option 2 - Safe zone animations

This option involves using the two safe zone animations. Every weapon has two of these, one for moving and another for not moving. You can swap these around pretty freely but the example below shows the crouched standing still animations replaced on the right:



I would suggest the most common use of these animations are to replace the original crouched animations, which is what Redux does. You can replace the crouched standing still animation and the couched walking animation but some advice is that only changing one of these looks weird in motion when using a controller and walking slowly.

So, to swap the crouched animations we are going to swap the following animations:

- Replace “Not moving (crouched)” with “Not moving (lowered weapon - safe zone style)”
- Replace “Walking (crouched)” with “Walking (lowered weapon - safe zone style)”

Another possibility here could be to lower weapons when walking standing up, which would involve swapping the following:

- Replace “Walking (standing up)” with “Walking (lowered weapon - safe zone style)”

Weapon/Upgrade shop

The weapon shop has separate entries for everything it sells and we can individually edit their price and the point at which they become available. It’s also possible to edit the order or the items in the weapon shop menu.

The weapon shop is edited within “gamemodesconfig.xml” (\patch_unpack\engine\gamemodes\l) and you can find the start of this section by searching for “<!--CATEGORY WEAPONS -->”.

There are number of subcategories, under these titles:

```
<!--SUBCATEGORY PRIMARYWEAPONS -->
<!--SUBCATEGORY SECONDARYWEAPONS -->
<!--SUBCATEGORY SPECIALWEAPONS -->
<!--SUBCATEGORY EXPLOSIVES -->
<!--SUBCATEGORY PRIMARYWEAPONS -->
    <!-- OPERATION MANUALS -->
    <!-- MAINTENANCE AND REPAIRS MANUALS -->
<!--SUBCATEGORY SECONDARYWEAPONS -->
    <!-- OPERATION MANUALS -->
    <!-- MAINTENANCE AND REPAIRS MANUALS -->
<!--SUBCATEGORY SPECIALWEAPONS -->
    <!-- OPERATION MANUALS -->
    <!-- MAINTENANCE AND REPAIRS MANUALS -->
<!--SUBCATEGORY VEHICLE MANUALS -->
<!--SUBCATEGORY BANDOLIERS -->
<!--SUBCATEGORY CAMOUFLAGE -->
<!--SUBCATEGORY FIRST AID KITS ICONS NOT SET-->
<!--SUBCATEGORY WEAPON CRATES ICONS NOT SET-->
```

Price

```
gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)
```

Weapon/upgrade shop prices are controlled by the “cost” stat of each shop entry.

The minimum value for this is 1, you can’t set a cost as 0.

```
<Item category="weapons" subcategory="primary" name="ithaca crate" nameOasis="WEAPONBAZAAR_ITHACA_CRATE_NAME"
descriptionOasis="WEAPONBAZAAR_ITHACA_CRATE_DESCRIPTION" availability="0" needsUnlock="0" cost="4" layer="Missions/WeaponBazaar/Primary/Ithaca"
unlockUpgrade="1" icon="hud_icon_ithaca"/>
```

Availability

```
gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)
```

Weapon/upgrade availability is controlled by the “availability” stat of each shop entry.

There are three options:

- 0 = Available during the tutorial, at the first visit to the shop.
- 1 = Available after the tutorial.
- 2 = Available at the start of act 2.

```
<Item category="weapons" subcategory="primary" name="ithaca crate" nameOasis="WEAPONBAZAAR_ITHACA_CRATE_NAME"
descriptionOasis="WEAPONBAZAAR_ITHACA_CRATE_DESCRIPTION" availability="0" needsUnlock="0" cost="4" layer="Missions/WeaponBazaar/Primary/Ithaca"
unlockUpgrade="1" icon="hud_icon_ithaca"/>
```

Order in shop menu

```
gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)
```

The order of the items in the weapon shop is controlled by the “name” value of each shop entry. This stat only controls the order of the menu so we can change the rest of each entry to redirect the entries to different weapons/upgrades. The order of the shop entries within this section of “gamemodesconfig.xml” is the order within the in-game menu.

Note that changing the order of the weapon shop using this method will break the “Upgrades” section of the pause menu.

Below is an example where the Makarov has replaced the ithaca as the top entry in the weapon shop:

```
<Item category="weapons" subcategory="primary" name="ithaca crate" nameOasis="WEAPONBAZAAR_MAKAROV_CRATE_NAME"
descriptionOasis="WEAPONBAZAAR_MAKAROV_CRATE_DESCRIPTION" availability="0" needsUnlock="0" cost="4"
layer="Missions/WeaponBazaar/Secondary/Makarov" unlockUpgrade="1" icon="hud_icon_makarov"/>
```

Player character

Damage dealt to enemies

```
gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)
```

Damage dealt to enemies is controlled by the “<HitLocations>” section of this file.

There are three sections with this title, which control singleplayer damage, multiplayer damage and multiplayer hardcore damage. The singleplayer section has the line “<!-- Lists the damage multipliers for various hit locations -->” directly before it.

Damage multipliers for each body part are listed. These work as proportional modifiers, so any value lower than 1 will decrease player damage and a value of 0.5 will decrease player damage by 50%.

```
<!-- Lists the damage multipliers for various hit locations -->
<HitLocations>
    <Head multiplier="6.0"/>
    <Torso multiplier="1.0"/>
    <Arms multiplier="1.0"/>
    <Legs multiplier="0.5"/>
    <Hands multiplier="0.5"/>
    <Feet multiplier="0.5"/>
</HitLocations>
```

Fall damage

gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)

Fall damage is controlled by the “<JumpDamage” stats under the “<DefaultCountersService>” title.

There are four stats here, which control two different aspects of fall damage.

“fMinSpeedFallDamage” controls the minimum speed that the player has to fall to inflict fall damage, and “fMaxSpeedFallDamage” controls the speed at which the play has to fall to inflict maximum fall damage.

“iMinFallLevelStim” controls the minimum damage that can be inflicted from a single fall, and “iMaxFallLevelStem” controls the maximum damage that can be inflicted from a single fall.

To remove fall damage completely set both “fMinSpeedFallDamage” and “fMaxSpeedFallDamage” to 2000.

```
<DefaultCountersService>
    <JumpDamage fMinSpeedFallDamage="14" fMaxSpeedFallDamage="17" iMinFallLevelStim="2" iMaxFallLevelStim="32" />
```

Health/Healing

Player health is controlled by two stats, overall max health and the size of each individual health bar. **If you want to increase/decrease player health you need to change both of these by the same proportion e.g. both x2.**

Max health

xx_Curves.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

There are separate sections controlling max health for each difficulty, the titles of these are:

- PlayerSicknessCurves.HealthMax_Casual
- PlayerSicknessCurves.HealthMax_ Experienced
- PlayerSicknessCurves.HealthMax_Hardcore
- PlayerSicknessCurves.HealthMax_ Infamous

There are two stats for each difficulty, I don’t know how they interact but you need to change both by the same proportion.

The sections look like this, with the stats you need to change highlighted in red:

```
<object hash="256A1FF9">
  <value name="Name" type="String">PlayerSicknessCurves.HealthMax_Casual</value>
  <object type="Entity">
    <value name="hidName" type="String">Curves.PlayerSicknessCurves.HealthMax_Casual</value>
    <value name="disEntityId" type="UInt64">168</value>
    <value hash="D2B3429E" type="String">CCurve</value>
    <value name="hidEntityClass" type="Hash">68745CCF</value>
    <object type="curveCurve">
      <value name="hidNumKnots" type="UInt32">2</value>
      <object type="Knot">
        <object type="Knot">
          <value name="Value" type="Vector4">
            <x>0</x>
            <y>1800</y>
            <z>0.5</z>
            <w>0</w>
          </value>
          <value name="Info" type="Vector4">
            <x>6.2832</x>
            <y>1</y>
            <z>0</z>
            <w>0</w>
          </value>
          <value name="Type" type="UInt32">0</value>
        </object>
      <object type="Knot">
        <value name="Value" type="Vector4">
          <x>5</x>
          <y>1300</y>
          <z>0.5</z>
          <w>0</w>
        </value>
        <value name="Info" type="Vector4">
          <x>6.2832</x>
          <y>1</y>
          <z>0</z>
          <w>0</w>
        </value>
      </object>
    </object>
  </object>
```

```
<value name="Type" type="UInt32">0</value>
</object>
</object>
</object>
</object>
</object>
```

Health bar size

xx_Curves.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

There are separate sections controlling health bar size for each difficulty, the titles of these are:

- PlayerSicknessCurves.HealthBarSize_Casual
- PlayerSicknessCurves.HealthBarSize_ Experienced
- PlayerSicknessCurves.HealthBarSize_ Hardcore
- PlayerSicknessCurves.HealthBarSize_ Infamous

There are two stats for each difficulty, they need to be changed by the same proportion that you used to change the max health values. The two values for health bar size need to be equal to the max health values divided by 5, as the game’s ui relies on the player having 5 health bars in total.

The sections look like this, with the stats you need to change highlighted in red:

```
<object hash="256A1FF9">
  <value name="Name" type="String">PlayerSicknessCurves.HealthBarSize_Casual</value>
  <object type="Entity">
    <value name="hidName" type="String">Curves.PlayerSicknessCurves.HealthBarSize_Casual</value>
    <value name="disEntityId" type="UInt64">162</value>
    <value hash="D2B3429E" type="String">CCurve</value>
    <value name="hidEntityClass" type="Hash">68745CCF</value>
    <object type="curveCurve">
      <value name="hidNumKnots" type="UInt32">2</value>
      <object type="Knot">
        <object type="Knot">
          <value name="Value" type="Vector4">
            <x>0</x>
            <y>360</y>
            <z>0.5</z>
            <w>0</w>
          </value>
          <value name="Info" type="Vector4">
            <x>6.2832</x>
            <y>1</y>
            <z>0</z>
            <w>0</w>
          </value>
          <value name="Type" type="UInt32">0</value>
        </object>
        <object type="Knot">
          <value name="Value" type="Vector4">
            <x>5</x>
            <y>260</y>
            <z>0.5</z>
            <w>0</w>
          </value>
          <value name="Info" type="Vector4">
            <x>6.2832</x>
            <y>1</y>
            <z>0</z>
            <w>0</w>
          </value>
          <value name="Type" type="UInt32">0</value>
        </object>
      </object>
    </object>
  </object>
</object>
```

Bug fix - Restoring critical healing animations to Infamous difficulty

gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)

There are two sections in this file with the title “HealthDegenerationLevels”, one for singleplayer and one for multiplayer. We are going to edit the singleplayer section, which looks like this:

```
<HealthDegenerationLevels>
  <DifficultyLevel CurveName="Curves.PlayerSicknessCurves.EasyDegenerationRate" />
  <DifficultyLevel CurveName="Curves.PlayerSicknessCurves.CasualDegenerationRate" />
  <DifficultyLevel CurveName="Curves.PlayerSicknessCurves.HardcoreDegenerationRate" />
  <DifficultyLevel CurveName="Curves.PlayerSicknessCurves.InfamousHealTime" />
</HealthDegenerationLevels>
```

To restore the correct critical healing animations, we are going to replace the “Curves.PlayerSicknessCurves.InfamousHealTime” section with “Curves.PlayerSicknessCurves.InfamousDegenerationRate”. Your finished section should look like this:

```
<HealthDegenerationLevels>
  <DifficultyLevel CurveName="Curves.PlayerSicknessCurves.EasyDegenerationRate" />
  <DifficultyLevel CurveName="Curves.PlayerSicknessCurves.CasualDegenerationRate" />
  <DifficultyLevel CurveName="Curves.PlayerSicknessCurves.HardcoreDegenerationRate" />
  <DifficultyLevel CurveName="Curves.PlayerSicknessCurves.InfamousDegenerationRate" />
</HealthDegenerationLevels>
```

Guide - Enhanced First Aid

This guide will cover enabling “Enhanced First Aid”, which means that when the player has no syrettes left they can hold the heal button and perform a full heal with a critical healing animation.

Step 1: Adding a new healing script

```
main_avater.gosm.xml (\patch_unpack\scripts\engine\objects\pawn\statemachine\)
```

Find the section of this file with this title:

```
<State FullName="::Main Avatar/Common/Idle" Type="CGOStateAnim">
```

Add these lines at the bottom of this section:

```
<Sink Name="enhanced first aid" Start="0" End="100">
  <Connection Target="::Healing/Healing/States/Entering Healing" Signal="enfirstaid" />
</Sink>
```

Your finished section should look like this:

```
<State FullName="::Main Avatar/Common/Idle" Type="CGOStateAnim">
  <Parameter Name="groups">
    <Parameter Name="0" Value="Idle" />
    <Parameter Name="1" Value="can_ironight" />
  </Parameter>
  <Parameter Name="duration" Value="0" />
  <Parameter Name="signalpriorities" />
  <Parameter Name="forceAnim" Value="0" />
  <Parameter Name="syncAnimDuration" Value="0" />
  <Parameter Name="animStatelD" Value="Pawn_Generic_Movement" />
  <Parameter Name="layerStatelD" Value="Pawn_Generic_Aim" />
  <Parameter Name="gestureStatelD" Value="0" />
  <Parameter Name="followTerrain" Value="0" />
  <Parameter Name="MoveLayer" Value="-1" />
  <Sink Name="Slide" Start="0" End="100">
    <Connection Target="::Main Avatar/Common/Slide/StartSliding" Signal="start_sliding" />
  </Sink>
  <Sink Name="random idle" Start="0" End="100">
    <Connection Target="::Main Avatar/Common/IdleCycleBreaker" Signal="cyclebreaker" />
  </Sink>
  <Sink Name="enhanced first aid" Start="0" End="100">
    <Connection Target="::Healing/Healing/States/Entering Healing" Signal="enfirstaid" />
  </Sink>
</State>
```

Step 2: Adding the key binding

```
inputactionmapcommon.xml (\patch_unpack\config\)
```

Find the section of this file with this title:

```
<ActionMap name="common_gameplay">
```

We are going to add a line each to the keyboard and gamepad sections that says if we hold their respective heal buttons it will execute our healing script. These lines are:

```
<!--Keyboard-->
<Binding input="kb:h" action="hold" signal="enfirstaid"/>

<!--Gamepad-->
<Binding input="pad:left_shoulder" action="hold" signal="enfirstaid"/>
```

Your completed section should look like this:

```
<ActionMap name="common_gameplay">
  <Import actionmap="common_gameplay_remap" optional=""/>
  <import actionmap="common_use_remap" optional=""/>
  <import actionmap="common_heal_remap" optional=""/>
  <import actionmap="common_jump_remap" optional=""/>
```

```
<import actionmap="common_crouch_remap" optional=""/>
<import actionmap="common_grenade_remap" optional=""/>

<!--Keyboard-->
<Binding input="kb:space" action="press" signal="jump"/>
<Binding input="kb:c" action="press" signal="crouch"/>
<Binding input="kb:e" action="press" signal="use"/>
<Binding input="kb:h" action="press" signal="heal"/>
<Binding input="kb:h" action="hold" signal="enfirstaid"/>
<Binding input="kb:q" action="press" signal="throw_grenade"/>
<Binding input="kb:f" action="press" signal="select_next_throw_gadget"/>

<!--Demo keys-->
<Binding input="kb:^" action="press" signal="start_rain_demo" />
<Binding input="kb:&" action="press" signal="stop_rain_demo" />
<Binding input="kb:*" action="press" signal="start_time_demo" />
<Binding input="kb:( " action="press" signal="start_storm_demo" />
<Binding input="kb:)" action="press" signal="stop_storm_demo" />

<!--Gamepad-->
<Binding input="pad:a" action="press" signal="jump"/>
<Binding input="pad:y" action="press" signal="use"/>
<Binding input="pad:b" action="press" signal="crouch"/>
<Binding input="pad:left_shoulder" action="press" signal="heal"/>
<Binding input="pad:left_shoulder" action="hold" signal="enfirstaid"/>
<Binding input="pad:right_shoulder" action="press" signal="throw_grenade"/>
<Binding input="pad:right_thumb_push" action="press" signal="select_next_throw_gadget"/>

</ActionMap>
```

Jump height

xx_player.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

Starting a new game is required for changes to this stat to take effect

Each playable character has their own section of this file, these are the entry titles:

- MainCharacter.PawnPlayer.Andre_Hyppolite
- MainCharacter.PawnPlayer.Frank_Bilders
- MainCharacter.PawnPlayer.Hakim_Echebbi
- MainCharacter.PawnPlayer.Josip_Idromeno
- MainCharacter.PawnPlayer.Marty_Alencar
- MainCharacter.PawnPlayer.Paul_Ferenc
- MainCharacter.PawnPlayer.Quarbani_Singh
- MainCharacter.PawnPlayer.Warren_Clyde
- MainCharacter.PawnPlayer.Xianyong_Bai

Jump height is controlled by two stats, “fJumpHeight” and “fJumpHeightExhausted”, both in the “Body” section.

“fJumpHeight” controls regular jump height and jump height when out of stamina is controlled by “fJumpHeightExhausted”.

These work as proportional modifiers, so any value lower than 1 will decrease jump height and a value of 0.5 will decrease jump height by 50%.

```
<object type="Body">
  <value name="fJumpHeight" type="Float">1</value>
  <value name="fJumpHeightExhausted" type="Float">0.4</value>
  <value name="fGravity" type="Float">-18</value>
```

Malaria

Time between malaria attacks

xx_Curves.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

The time between malaria attacks is controlled by the “PlayerSicknessCurves.MalariaTimeBetweenEachAttack” section.

This section is controlled with two identical values that make up a timer. Increase the value to reduce malaria attacks and decrease the value to increase malaria attacks.

The section looks like this, with the relevant stats in red:

```
<object hash="256A1FF9">
  <value name="Name" type="String">PlayerSicknessCurves.MalariaTimeBetweenEachAttack</value>
  <object type="Entity">
    <value name="hidName" type="String">Curves.PlayerSicknessCurves.MalariaTimeBetweenEachAttack</value>
    <value name="disEntityId" type="UInt64">179</value>
    <value hash="D2B3429E" type="String">CCurve</value>
    <value name="hidEntityClass" type="Hash">68745CCF</value>
    <object type="curveCurve">
      <value name="hidNumKnots" type="UInt32">2</value>
    <object type="Knots">
```

```
<object type="Knot">
  <value name="Value" type="Vector4">
    <x>0</x>
    <y>10</y>
    <z>0.5</z>
    <w>0</w>
  </value>
  <value name="Info" type="Vector4">
    <x>6.2832</x>
    <y>1</y>
    <z>0</z>
    <w>0</w>
  </value>
  <value name="Type" type="UInt32">0</value>
</object>
<object type="Knot">
  <value name="Value" type="Vector4">
    <x>5</x>
    <y>10</y>
    <z>0.5</z>
    <w>0</w>
  </value>
  <value name="Info" type="Vector4">
    <x>6.2832</x>
    <y>1</y>
    <z>0</z>
    <w>0</w>
  </value>
  <value name="Type" type="UInt32">0</value>
</object>
</object>
</object>
</object>
```

Removing malaria

gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)

To remove malaria completely find the “<malaria” section of the file, it looks like this:

```
<Malaria
  FirstAttackTime="Curves.PlayerSicknessCurves.MalariaTimeBeforeFirstAttack"
  BetweenAttackTime="Curves.PlayerSicknessCurves.MalariaTimeBetweenEachAttack"
  MinorAttackQte="Curves.PlayerSicknessCurves.MalariaMaxNumberOfMinorAttack"
  MinorAttackDuration="Curves.PlayerSicknessCurves.MalariaMinorAttackDuration"
/>
```

Change it to this:

```
<Malaria
  FirstAttackTime = "Curves.PlayerSicknessCurves.HealthMax_Casual"
  BetweenAttackTime = "Curves.PlayerSicknessCurves.HealthMax_Casual"
  MinorAttackQte = "Curves.PlayerSicknessCurves.HealthMax_Casual"
  MinorAttackDuration = "Curves.PlayerSicknessCurves.HealthMax_Casual"
/>
```

Movement speed

Walking/Crouch walking

xx_player.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

Each playable character has their own section of this file, these are the entry titles:

- MainCharacter.PawnPlayer.Andre_Hyppolite
- MainCharacter.PawnPlayer.Frank_Bilders
- MainCharacter.PawnPlayer.Hakim_Echebbi
- MainCharacter.PawnPlayer.Josip_Idromeno
- MainCharacter.PawnPlayer.Marty_Alencar
- MainCharacter.PawnPlayer.Paul_Ferenc
- MainCharacter.PawnPlayer.Quarbani_Singh
- MainCharacter.PawnPlayer.Warren_Clyde
- MainCharacter.PawnPlayer.Xianyong_Bai

Walk speed is controlled by the “fWalkingMaxSpeed” stat in the “Body” section. The max value for this is “5” as any higher will cause the sprint animation when walking.

Crouch walking speed is controlled by the “fWalkingMaxSpeedCrouch” stat in the “Body” section.

```
<object type="Body">
  <value name="fJumpHeight" type="Float">1</value>
  <value name="fJumpHeightExhausted" type="Float">0.4</value>
  <value name="fGravity" type="Float">-18</value>
  <value name="fWalkingMaxSpeed" type="Float">3.8</value>
  <value name="fWalkingMaxSpeedCrouch" type="Float">2.5</value>
```

Sprinting

xx_Curves.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

Sprint speed is controlled by the “Locomotion.Sprint” section of this file.

There are a significant number of values that control sprint speed. I don’t know how they all work but from what I could interpret there is a series of values that control acceleration, and one value that controls max speed.

In my experience I was able to increase sprint acceleration by 2x and max sprint speed by 3x while maintaining the sprint animation, any higher and the arms disappeared while sprinting.

This is the sprint section with sprint acceleration values highlighted red and the max sprint speed value highlighted blue:

```
<object hash="256A1FF9">
  <value name="Name" type="String">Locomotion.Sprint</value>
  <object type="Entity">
    <value name="hidName" type="String">Curves.Locomotion.Sprint</value>
    <value name="disEntityId" type="UInt64">153</value>
    <value hash="D2B3429E" type="String">CCurve</value>
    <value name="hidEntityClass" type="Hash">68745CCF</value>
    <object type="curveCurve">
      <value name="hidNumKnots" type="UInt32">16</value>
      <object type="Knot">
        <object type="Knot">
          <value name="Value" type="Vector4">
            <x>-0.0056</x>
            <y>4.9611</y>
            <z>0.5</z>
            <w>0</w>
          </value>
          <value name="Info" type="Vector4">
            <x>6.2832</x>
            <y>1</y>
            <z>0</z>
            <w>0</w>
          </value>
          <value name="Type" type="UInt32">0</value>
        </object>
        <object type="Knot">
          <value name="Value" type="Vector4">
            <x>0.5054</x>
            <y>8.8956</y>
            <z>2.2014</z>
            <w>-0.0950714</w>
          </value>
          <value name="Info" type="Vector4">
            <x>6.2832</x>
            <y>1</y>
            <z>0</z>
            <w>0</w>
          </value>
          <value name="Type" type="UInt32">0</value>
        </object>
        <object type="Knot">
          <value name="Value" type="Vector4">
            <x>0.5054</x>
            <y>8.8956</y>
            <z>2.2014</z>
            <w>-0.0950714</w>
          </value>
          <value name="Info" type="Vector4">
            <x>6.2832</x>
            <y>1</y>
            <z>0</z>
            <w>0</w>
          </value>
          <value name="Type" type="UInt32">0</value>
        </object>
        <object type="Knot">
          <value name="Value" type="Vector4">
            <x>0.6035</x>
            <y>8.9839</y>
            <z>2.2014</z>
            <w>-0.0950714</w>
          </value>
```

```
<value name="Info" type="Vector4">
  <x>6.2832</x>
  <y>1</y>
  <z>0</z>
  <w>0</w>
</value>
<value name="Type" type="UInt32">0</value>
</object>
<object type="Knot">
  <value name="Value" type="Vector4">
    <x>0.6035</x>
    <y>8.9839</y>
    <z>1.5298</z>
    <w>1.29931</w>
  </value>
  <value name="Info" type="Vector4">
    <x>6.2832</x>
    <y>1</y>
    <z>0</z>
    <w>0</w>
  </value>
  <value name="Type" type="UInt32">0</value>
</object>
<object type="Knot">
  <value name="Value" type="Vector4">
    <x>0.8081</x>
    <y>8.8846</y>
    <z>0.5</z>
    <w>0</w>
  </value>
  <value name="Info" type="Vector4">
    <x>6.2832</x>
    <y>1</y>
    <z>0</z>
    <w>0</w>
  </value>
  <value name="Type" type="UInt32">0</value>
</object>
<object type="Knot">
  <value name="Value" type="Vector4">
    <x>0.8081</x>
    <y>8.8846</y>
    <z>0.5</z>
    <w>0</w>
  </value>
  <value name="Info" type="Vector4">
    <x>6.2832</x>
    <y>1</y>
    <z>0</z>
    <w>0</w>
  </value>
  <value name="Type" type="UInt32">0</value>
</object>
<object type="Knot">
  <value name="Value" type="Vector4">
    <x>0.8992</x>
    <y>8.6577</y>
    <z>0.5</z>
    <w>0</w>
  </value>
  <value name="Info" type="Vector4">
    <x>6.2832</x>
    <y>1</y>
    <z>0</z>
    <w>0</w>
  </value>
  <value name="Type" type="UInt32">0</value>
</object>
<object type="Knot">
  <value name="Value" type="Vector4">
    <x>0.8992</x>
    <y>8.6577</y>
    <z>0.5</z>
    <w>0</w>
  </value>
  <value name="Info" type="Vector4">
    <x>6.2832</x>
    <y>1</y>
    <z>0</z>
    <w>0</w>
  </value>
  <value name="Type" type="UInt32">0</value>
</object>
<object type="Knot">
  <value name="Value" type="Vector4">
    <x>1.2946</x>
    <y>6.6723</y>
    <z>0.5</z>
    <w>0</w>
  </value>
```

```
<value name="Info" type="Vector4">
  <x>6.2832</x>
  <y>1</y>
  <z>0</z>
  <w>0</w>
</value>
<value name="Type" type="UInt32">0</value>
</object>
<object type="Knot">
  <value name="Value" type="Vector4">
    <x>1.2946</x>
    <y>6.6723</y>
    <z>0.5</z>
    <w>0</w>
  </value>
  <value name="Info" type="Vector4">
    <x>6.2832</x>
    <y>1</y>
    <z>0</z>
    <w>0</w>
  </value>
  <value name="Type" type="UInt32">0</value>
</object>
<object type="Knot">
  <value name="Value" type="Vector4">
    <x>1.3738</x>
    <y>6.4194</y>
    <z>0.5</z>
    <w>0</w>
  </value>
  <value name="Info" type="Vector4">
    <x>6.2832</x>
    <y>1</y>
    <z>0</z>
    <w>0</w>
  </value>
  <value name="Type" type="UInt32">0</value>
</object>
<object type="Knot">
  <value name="Value" type="Vector4">
    <x>1.3738</x>
    <y>6.4194</y>
    <z>0.5</z>
    <w>0</w>
  </value>
  <value name="Info" type="Vector4">
    <x>6.2832</x>
    <y>1</y>
    <z>0</z>
    <w>0</w>
  </value>
  <value name="Type" type="UInt32">0</value>
</object>
<object type="Knot">
  <value name="Value" type="Vector4">
    <x>1.5322</x>
    <y>6.2996</y>
    <z>0.5</z>
    <w>0</w>
  </value>
  <value name="Info" type="Vector4">
    <x>6.2832</x>
    <y>1</y>
    <z>0</z>
    <w>0</w>
  </value>
  <value name="Type" type="UInt32">0</value>
</object>
<object type="Knot">
  <value name="Value" type="Vector4">
    <x>1.5322</x>
    <y>6.2996</y>
    <z>0.5</z>
    <w>0</w>
  </value>
  <value name="Info" type="Vector4">
    <x>6.2832</x>
    <y>1</y>
    <z>0</z>
    <w>0</w>
  </value>
  <value name="Type" type="UInt32">0</value>
</object>
<object type="Knot">
  <value name="Value" type="Vector4">
    <x>6.1281</x>
    <y>6.0708</y>
    <z>0.5</z>
    <w>0</w>
  </value>
```

```
<value name="Info" type="Vector4">
  <x>6.2832</x>
  <y>1</y>
  <z>0</z>
  <w>0</w>
</value>
<value name="Type" type="UInt32">0</value>
</object>
</object>
</object>
</object>
</object>
```

Sprinting turn modifier

```
xx_player.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
```

Each playable character has their own section of this file, these are the entry titles:

- MainCharacter.PawnPlayer.Andre_Hyppolite
- MainCharacter.PawnPlayer.Frank_Bilders
- MainCharacter.PawnPlayer.Hakim_Echebbi
- MainCharacter.PawnPlayer.Josip_Idromeno
- MainCharacter.PawnPlayer.Marty_Alencar
- MainCharacter.PawnPlayer.Paul_Ferenc
- MainCharacter.PawnPlayer.Quarbani_Singh
- MainCharacter.PawnPlayer.Warren_Clyde
- MainCharacter.PawnPlayer.Xianyong_Bai

The sprint turn modifier is controlled by the stat “fSprintingTurnModifier” in the “Body” section. This modifier controls how much you slow down when turning while sprinting.

This works as a proportional modifier, so any value lower than 1 will decrease sprint speed when turning and a value of 0.5 will decrease sprint speed when turning by 50%.

```
<value name="fSprintingTurnModifier" type="Float">0.2</value>
```

Swimming

```
xx_player.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
```

Each playable character has their own section of this file, these are the entry titles:

- MainCharacter.PawnPlayer.Andre_Hyppolite
- MainCharacter.PawnPlayer.Frank_Bilders
- MainCharacter.PawnPlayer.Hakim_Echebbi
- MainCharacter.PawnPlayer.Josip_Idromeno
- MainCharacter.PawnPlayer.Marty_Alencar
- MainCharacter.PawnPlayer.Paul_Ferenc
- MainCharacter.PawnPlayer.Quarbani_Singh
- MainCharacter.PawnPlayer.Warren_Clyde
- MainCharacter.PawnPlayer.Xianyong_Bai

Swimming speed is controlled by two stats, "fSwimmingMaxSpeed" and "fSwimmingAcceleration", both in the “Body” section. The purposes of these should be obvious.

```
<value name="fSwimmingMaxSpeed" type="Float">5</value>
<value name="fSwimmingAcceleration" type="Float">5</value>
```

Swimming underwater

```
xx_player.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
```

Each playable character has their own section of this file, these are the entry titles:

- MainCharacter.PawnPlayer.Andre_Hyppolite
- MainCharacter.PawnPlayer.Frank_Bilders
- MainCharacter.PawnPlayer.Hakim_Echebbi
- MainCharacter.PawnPlayer.Josip_Idromeno
- MainCharacter.PawnPlayer.Marty_Alencar
- MainCharacter.PawnPlayer.Paul_Ferenc
- MainCharacter.PawnPlayer.Quarbani_Singh
- MainCharacter.PawnPlayer.Warren_Clyde
- MainCharacter.PawnPlayer.Xianyong_Bai

Swimming speed when underwater is controlled by two stats, "fDivingMaxSpeed" and "fDivingAcceleration", both in the “Body” section. The purposes of these should be obvious.

```
<value name="fDivingMaxSpeed" type="Float">5</value>
<value name="fDivingAcceleration" type="Float">5</value>
```

Slope climbing ability

xx_player.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

Each playable character has their own section of this file, these are the entry titles:

- MainCharacter.PawnPlayer.Andre_Hyppolite
- MainCharacter.PawnPlayer.Frank_Bilders
- MainCharacter.PawnPlayer.Hakim_Echebbi
- MainCharacter.PawnPlayer.Josip_Idromeno
- MainCharacter.PawnPlayer.Marty_Alencar
- MainCharacter.PawnPlayer.Paul_Ferenc
- MainCharacter.PawnPlayer.Quarbani_Singh
- MainCharacter.PawnPlayer.Warren_Clyde
- MainCharacter.PawnPlayer.Xianyong_Bai

Slope climbing ability is controlled by two stats, “fMaxSlope” and “fMaxTerrainSlope”, both in the “CharacterParams” section.

These two stats control the player’s ability to climb two different kinds of slope. “fMaxTerrainSlope” controls the ability to climb the mountains and hills that mark the edge of the playable areas. “fMaxSlope” controls the ability to climb everything else, including the roofs of buildings and large boulders found within the playable areas. Increasing “fMaxSlope” too much can make it impossible to fall through small gaps, such as trying to fall through the North Railyard roof to reach the diamond briefcase.

```
<object type="CharacterParams">
  <value name="fMass" type="Float">80</value>
  <value name="bUpdateRotation" type="Bool">False</value>
  <value name="bUseRigidBased" type="Bool">False</value>
  <value name="fMaxSlope" type="Float">60</value>
  <value name="fMaxTerrainSlope" type="Float">45</value>
```

Stamina

Sprint stamina drain

xx_Curves.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

Sprint stamina drain is controlled by the “PlayerSicknessCurves.StaminaSprintDrain” section of this file.

There are two stats to change, with the same change applied to both. The default stat for sprint stamina drain is -10. This is relative to 0, which would mean there is no sprint stamina drain.

The section looks like this, with the stats you need to change highlighted in red:

```
<object hash="256A1FF9">
  <value name="Name" type="String">PlayerSicknessCurves.StaminaSprintDrain</value>
  <object type="Entity">
    <value name="hidName" type="String">Curves.PlayerSicknessCurves.StaminaSprintDrain</value>
    <value name="disEntityId" type="UInt64">187</value>
    <value hash="D2B3429E" type="String">CCurve</value>
    <value name="hidEntityClass" type="Hash">68745CCF</value>
    <object type="curveCurve">
      <value name="hidNumKnots" type="UInt32">2</value>
      <object type="Knot">
        <object type="Knot">
          <value name="Value" type="Vector4">
            <x>0</x>
            <y>-10</y>
            <z>0.5</z>
            <w>0</w>
          </value>
          <value name="Info" type="Vector4">
            <x>6.2832</x>
            <y>1</y>
            <z>0</z>
            <w>0</w>
          </value>
          <value name="Type" type="UInt32">0</value>
        </object>
        <object type="Knot">
          <value name="Value" type="Vector4">
            <x>5</x>
```

```
<y>-10</y>
<z>0.5</z>
<w>0</w>
</value>
<value name="Info" type="Vector4">
  <x>6.2832</x>
  <y>1</y>
  <z>0</z>
  <w>0</w>
</value>
<value name="Type" type="UInt32">0</value>
</object>
</object>
</object>
</object>
</object>
```

Jump stamina drain

xx_Curves.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

Sprint stamina drain is controlled by the “PlayerSicknessCurves.StaminaJumpDrain” section of this file.

There are two stats to change, with the same change applied to both. The default stat for jump stamina drain is 10. This is relative to 0, which would mean there is no jump stamina drain.

The section looks like this, with the stats you need to change highlighted in red:

```
<object hash="256A1FF9">
  <value name="Name" type="String">PlayerSicknessCurves.StaminaJumpDrain</value>
  <object type="Entity">
    <value name="hidName" type="String">Curves.PlayerSicknessCurves.StaminaJumpDrain</value>
    <value name="disEntityId" type="UInt64">182</value>
    <value hash="D2B3429E" type="String">CCurve</value>
    <value name="hidEntityClass" type="Hash">68745CCF</value>
    <object type="curveCurve">
      <value name="hidNumKnots" type="UInt32">2</value>
      <object type="Knots">
        <object type="Knot">
          <value name="Value" type="Vector4">
            <x>0</x>
            <y>10</y>
            <z>0.5</z>
            <w>0</w>
          </value>
          <value name="Info" type="Vector4">
            <x>6.2832</x>
            <y>1</y>
            <z>0</z>
            <w>0</w>
          </value>
          <value name="Type" type="UInt32">0</value>
        </object>
        <object type="Knot">
          <value name="Value" type="Vector4">
            <x>5</x>
            <y>10</y>
            <z>0.5</z>
            <w>0</w>
          </value>
          <value name="Info" type="Vector4">
            <x>6.2832</x>
            <y>1</y>
            <z>0</z>
            <w>0</w>
          </value>
          <value name="Type" type="UInt32">0</value>
        </object>
      </object>
    </object>
  </object>
</object>
```

Underwater breath

xx_Curves.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

The time the player can remain underwater is controlled by the “PlayerSicknessCurves.HealthDrownRate” section of this file.

This section is controlled with two identical values that control the rate at which the player loses health when drowning. The default rate of health loss is -50, which is relative to 0 which would mean the player can stay underwater forever.

The section looks like this, with the relevant stats in red:

```
<object hash="256A1FF9">
  <value name="Name" type="String">PlayerSicknessCurves.HealthDrownRate</value>
  <object type="Entity">
    <value name="hidName" type="String">Curves.PlayerSicknessCurves.HealthDrownRate</value>
    <value name="disEntityId" type="UInt64">166</value>
    <value hash="D2B3429E" type="String">CCurve</value>
    <value name="hidEntityClass" type="Hash">68745CCF</value>
    <object type="curveCurve">
      <value name="hidNumKnots" type="UInt32">2</value>
      <object type="Knots">
        <object type="Knot">
          <value name="Value" type="Vector4">
            <x>0</x>
            <y>-50</y>
            <z>0.5</z>
            <w>0</w>
          </value>
          <value name="Info" type="Vector4">
            <x>6.2832</x>
            <y>1</y>
            <z>0</z>
            <w>0</w>
          </value>
          <value name="Type" type="UInt32">0</value>
        </object>
        <object type="Knot">
          <value name="Value" type="Vector4">
            <x>5</x>
            <y>-50</y>
            <z>0.5</z>
            <w>0</w>
          </value>
          <value name="Info" type="Vector4">
            <x>6.2832</x>
            <y>1</y>
            <z>0</z>
            <w>0</w>
          </value>
          <value name="Type" type="UInt32">0</value>
        </object>
      </object>
    </object>
  </object>
</object>
```

Guide - Desert exploration

This guide will cover how we can control the extent to which desert exploration is possible. The game works with stamina being drained when in the desert and once you have no stamina left you collapse. We are going to edit how fast the desert drains stamina but it is possible to run off the edges of the map so it's up to you how much freedom you allow your players.

Step 1: Possible simple solution

gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)

Find the stamina section of this file by searching for “<Malaria”. The singleplayer stamina section is directly above this and looks like this:

```
<Stamina
  Max="Curves.PlayerSicknessCurves.StaminaMax"
  ActionThreshold="Curves.PlayerSicknessCurves.StaminaSprintThreshold"
  NearZeroFX="Curves.PlayerSicknessCurves.StaminaNearZeroFX"
  RegenRate="Curves.PlayerSicknessCurves.StaminaRegenRate"
  SprintDrain="Curves.PlayerSicknessCurves.StaminaSprintDrain"
  LowDrain="Curves.PlayerSicknessCurves.StaminaLowDrain"
  HighDrain="Curves.PlayerSicknessCurves.StaminaHighDrain"
  SwimDrain="Curves.PlayerSicknessCurves.StaminaSprintDrain"
  DrownHealthDrain="Curves.PlayerSicknessCurves.HealthDrownRate"
  JumpDrain="Curves.PlayerSicknessCurves.StaminaJumpDrain"
/>
```

This section lists different actions and the relevant curves linked to them.

The “LowDrain” and “HighDrain” curves control desert stamina drain. “LowDrain” controls drain at the edge of the desert and “HighDrain” controls drain further in. “LowDrain” already allows some exploration with an initial drain value of -0.5 which increases to -4 over time, “HighDrain” is designed to stop you in your tracks with a flat drain value of -20.

An easy simple solution which allows some desert exploration is to swap the “HighDrain” curve to the “LowDrain” curve, so "Curves.PlayerSicknessCurves.StaminaLowDrain".

With this solution desert exploration is still pretty limited, if you want more then we need to make a new curve.

Step 2: Creating a new stamina drain curve

xx_Curves.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

To create a new curve you can use the section below as a base. This section has the title “Curves.PlayerSicknessCurves.StaminaDesertDrain” and this can be pasted into the “LowDrain” and “HighDrain” curve values in the stamina section within “gamemodesconfig.xml” as mentioned in the previous step.

There are two values to change in this section, which are highlighted red. Change both values to the same number and they must be negative to drain stamina. I suggest choosing a value between -1 and -4.

You can could change the value to 0 so you can explore the desert unhindered, but if you run out of stamina through sprinting or jumping then you will still collapse.

```
<object hash="256A1FF9">
  <value name="Name" type="String">PlayerSicknessCurves.StaminaDesertDrain</value>
  <object type="Entity">
    <value name="hidName" type="String">Curves.PlayerSicknessCurves.StaminaDesertDrain</value>
    <value name="disEntityId" type="UInt64">181</value>
    <value hash="D2B3429E" type="String">CCurve</value>
    <value name="hidEntityClass" type="Hash">68745CCF</value>
    <object type="curveCurve">
      <value name="hidNumKnots" type="UInt32">2</value>
      <object type="Knots">
        <object type="Knot">
          <value name="Value" type="Vector4">
            <x>0</x>
            <y>-2</y>
            <z>0.5</z>
            <w>0</w>
          </value>
          <value name="Info" type="Vector4">
            <x>6.2832</x>
            <y>1</y>
            <z>0</z>
            <w>0</w>
          </value>
          <value name="Type" type="UInt32">0</value>
        </object>
        <object type="Knot">
          <value name="Value" type="Vector4">
            <x>5</x>
            <y>-2</y>
            <z>0.5</z>
            <w>0</w>
          </value>
          <value name="Info" type="Vector4">
            <x>6.2832</x>
            <y>1</y>
            <z>0</z>
            <w>0</w>
          </value>
          <value name="Type" type="UInt32">0</value>
        </object>
      </object>
    </object>
  </object>
</object>
```

The completed stamina section from “gamemodesconfig.xml” should look like this:

```
<Stamina
  Max="Curves.PlayerSicknessCurves.StaminaMax"
  ActionThreshold="Curves.PlayerSicknessCurves.StaminaSprintThreshold"
  NearZeroFX="Curves.PlayerSicknessCurves.StaminaNearZeroFX"
  RegenRate="Curves.PlayerSicknessCurves.StaminaRegenRate"
  SprintDrain="Curves.PlayerSicknessCurves.StaminaSprintDrain"
  LowDrain="Curves.PlayerSicknessCurves.StaminaDesertDrain"
  HighDrain="Curves.PlayerSicknessCurves.StaminaDesertDrain"
  SwimDrain="Curves.PlayerSicknessCurves.StaminaSprintDrain"
  DrownHealthDrain="Curves.PlayerSicknessCurves.HealthDrownRate"
  JumpDrain="Curves.PlayerSicknessCurves.StaminaJumpDrain"
/>
```

Guide - Adding the female mercenaries as playable characters

This guide will cover how to add the female mercenaries as playable characters. These new characters won't replace any of the existing options. A similar method could be used for making any character in the game playable.

Step 1: Adding new entries to the character select menu

sp_avatar.mgb.desc (\patch_unpack\ui\)
There are different folders for widescreen/non-widescreen aspect ratios and the different languages, it's pretty self-explanatory when you see it.

In this file you will see the list of available characters under the title <avatar_list>. Add the following lines to the end of this section. These MUST be add at the end, it is not possible to add them midway through the existing options:

```
<avatar buddyName="Michele_Dachss" displayName="Michele Dachss" text="STORYMODE_AVATAR_MICHELE" />
<avatar buddyName="Flora_Guillen" displayName="Flora Guillen" text="STORYMODE_AVATAR_FLORA" />
<avatar buddyName="Nasreen_Davar" displayName="Nasreen Davar" text="STORYMODE_AVATAR_NASREEN" />
```

Your completed section should look like this:

```
<avatar_list>
  <avatar buddyName="Marty_Alencar" displayName="Marty Alencar" text="STORYMODE_AVATAR_MARTY" />
  <avatar buddyName="Warren_Clyde" displayName="Warren Clyde" text="STORYMODE_AVATAR_WARREN" />
  <avatar buddyName="Josip_Idromeno" displayName="Josip Idromeno" text="STORYMODE_AVATAR_JOSIP" />
  <avatar buddyName="Paul_Ferenc" displayName="Paul Ferenc" text="STORYMODE_AVATAR_PAUL" />
  <avatar buddyName="Quarbani_Singh" displayName="Quarbani Singh" text="STORYMODE_AVATAR_QUARBANI" />
  <avatar buddyName="Andre_Hyppolite" displayName="Andre Hyppolite" text="STORYMODE_AVATAR_ANDRE" />
  <avatar buddyName="Hakim_Echebbi" displayName="Hakim Echebbi" text="STORYMODE_AVATAR_HAKIM" />
  <avatar buddyName="Frank_Bilders" displayName="Frank Bilders" text="STORYMODE_AVATAR_FRANK" />
  <avatar buddyName="Xianyong_Bai" displayName="Xianyong Bai" text="STORYMODE_AVATAR_XIANYONG" />
  <avatar buddyName="Nasreen_Davar" displayName="Nasreen Davar" text="STORYMODE_AVATAR_NASREEN" />
  <avatar buddyName="Michele_Dachss" displayName="Michele Dachss" text="STORYMODE_AVATAR_MICHELE" />
  <avatar buddyName="Flora_Guillen" displayName="Flora Guillen" text="STORYMODE_AVATAR_FLORA" />
</avatar_list>
```

Step 2: Adding character menu info text

\patch_pack\languages\ - Each language has its own folder and “oasisstrings.rml” file

Within this file search for “STORYMODE_AVATAR_XIANYONG” and you will be taken to the correct section.

We are going to add three new entries. There is a particular structure as the single line contains multiple menu lines of text, so copy another player character's lines and paste them below the existing ones three times. These new entries should be titled like this:

```
<string enum="STORYMODE_AVATAR_NASREEN" ...
<string enum="STORYMODE_AVATAR_MICHELE" ...
<string enum="STORYMODE_AVATAR_FLORA" ...
```

After the titles you will see there are headings for different character details like age, place of birth, height etc. You can edit these to your liking!

(Optional) Step 3: Creating character menu images

avatar_bai.xbt (\patch_unpack\common_unpack\ui\textures\avatars\)

At this point it is worth noting that the character menu doesn't fully allow new entries to be added. As mentioned in step 1 our new characters must be added to the end of the list and this is because otherwise all the character photos are pushed out of order. Because our new characters are at the end of the list they also share the photo for Xianyong Bai. So, if you want to create new images for the female characters you can only edit the “avatar_bai.xbt” file and use an identical image for Xianyong and any you have added.

Step 4: Editing character models to use for playable characters

\worlds_unpack\graphics\actors\

To use an existing model as a playable character model we are going to create a new version that doesn't have any head/facial features. Otherwise the camera is clipped inside the head and you're looking at the back side of their face.

All of these model files can be found by unpack “worlds.fat/.dat” and then within \worlds_unpack\graphics\actors\. You will see every character has a folder and each contains a .xbg file. The female character files are located here:

FCHAPPART-M-2008022137135450.xbm
FCHAPPART-M-2008031738101486.xbm
LJSIMPSON-M-2008051557329970.xbm
YCLOUTIER-M-2008052156569844.xbm

Step 5: Connecting player character entries to models
xx_player.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

This file lists all the possible player characters. The female mercenaries already have entries, presumably because at one point they were planned to be included. These are their titles:

MainCharacter.PawnPlayer.Nasreen_Davar
MainCharacter.PawnPlayer.Michele_Dachss
MainCharacter.PawnPlayer.Flora_Guillen

To find the right sections of these entries search for “<object type=“object”>”. You will be taken to a section that look like this:

```
<object type="object">
  <value name="hidIndex" type="UInt32">0</value>
  <value hash="BF9B3A5C" type="String">graphics\characters\buddies\nasreen\nasreen.xbg</value>
  <value name="objModel" type="Hash">71BCC1D7</value>
  <value name="hidMeshName" type="String"></value>
  <value hash="E1A0EE56" type="String"></value>
  <value name="hidNodeName" type="Hash">FFFFFFFF</value>
  <value hash="0D9C8B1A" type="String"></value>
  <value name="hidNodeNameLOD0" type="Hash">FFFFFFFF</value>
  <value name="hidDetailObject" type="Bool">True</value>
</object>
<object type="object">
  <value name="hidIndex" type="UInt32">1</value>
  <value hash="BF9B3A5C" type="String">graphics\characters\buddies\warren\warren_avatar.xbg</value>
  <value name="objModel" type="Hash">1519F107</value>
  <value name="hidMeshName" type="String"></value>
  <value hash="E1A0EE56" type="String"></value>
  <value name="hidNodeName" type="Hash">FFFFFFFF</value>
  <value hash="0D9C8B1A" type="String"></value>
  <value name="hidNodeNameLOD0" type="Hash">FFFFFFFF</value>
  <value name="hidDetailObject" type="Bool">True</value>
</object>
```

We are going to edit the second half of this section which by default is directing to the Warren Clyde model. There are two lines we need to change to do this:

- 1. The "BF9B3A5C" needs to be changed to the file directory of our edited .xbg file.
- 2. The "objModel" needs to be changed to a CRC32B hash. This can be generated by entering the file directory into a CRC32B hash generator. There are several of these available online and you can google this, I used one available [here](#). To use the one I linked to you paste your file directory (e.g. patch_unpack\graphics\actors\buddy_floraguillen\floraguillen_avatar.xbg) into the “String to encode” box and then press “Encode”. Your hash is then shown in the “CRC32B encoded string” box.

Below I will give these completed sections that you can paste into your file:

Nasreen

```
<object type="object">
  <value name="hidIndex" type="UInt32">1</value>
  <value hash="BF9B3A5C" type="String">graphics\actors\buddy_nasreendavar\nasreendavar_avatar.xbg</value>
  <value name="objModel" type="Hash">9DA20FB2</value>
  <value name="hidMeshName" type="String"></value>
  <value hash="E1A0EE56" type="String"></value>
  <value name="hidNodeName" type="Hash">FFFFFFFF</value>
  <value hash="0D9C8B1A" type="String"></value>
  <value name="hidNodeNameLOD0" type="Hash">FFFFFFFF</value>
  <value name="hidDetailObject" type="Bool">True</value>
</object>
```

Michele

```
<object type="object">
  <value name="hidIndex" type="UInt32">1</value>
  <value hash="BF9B3A5C" type="String">graphics\actors\buddy_micheledachss\micheledachss_avatar.xbg</value>
  <value name="objModel" type="Hash">CAE54B41</value>
  <value name="hidMeshName" type="String"></value>
  <value hash="E1A0EE56" type="String"></value>
  <value name="hidNodeName" type="Hash">FFFFFFFF</value>
  <value hash="0D9C8B1A" type="String"></value>
  <value name="hidNodeNameLOD0" type="Hash">FFFFFFFF</value>
  <value name="hidDetailObject" type="Bool">True</value>
</object>
```

Flora

```
<object type="object">
  <value name="hidIndex" type="UInt32">1</value>
  <value hash="BF9B3A5C" type="String">graphics\actors\buddy_floraguillen\floraguillen_avatar.xbg</value>
  <value name="objModel" type="Hash">74D38315</value>
```

```
<value name="hidMeshName" type="String"></value>
<value hash="E1A0EE56" type="String"></value>
<value name="hidNodeName" type="Hash">FFFFFFF</value>
<value hash="0D9C8B1A" type="String"></value>
<value name="hidNodeNameLOD0" type="Hash">FFFFFFF</value>
<value name="hidDetailObject" type="Bool">True</value>
</object>
```

Step 6: Removing player character sounds

xx_player.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

The game only has sounds for a male character which is out of place when you’re playing as a woman.

Again, these are the titles for the female characters:

MainCharacter.PawnPlayer.Nasreen_Davar
MainCharacter.PawnPlayer.Michele_Dachss
MainCharacter.PawnPlayer.Flora_Guillen

To find the sound section for these entries search for this title: <object hash="8C369C01" type="PostFXSounds">

The section should look like this:

```
<object hash="8C369C01" type="PostFXSounds">
  <value name="sndtpPostFXSoundType" hash="FBCA8C9E" type="Int32">12</value> <!-- type="BinHex" value="0C000000" -->
  <value name="sndtpPostFXSoundType3D" hash="CFCF6113" type="Int32">-1</value> <!-- type="BinHex" value="FFFFFFF" -->
  <value name="sndBlurStimSound" hash="9B855391" type="String">0xFFFFFFFF</value> <!-- type="BinHex" value="30784646464646464600" -->
  <value name="sndBurnStimSound" hash="1E9DF019" type="String">0x004BF6C4</value> <!-- type="BinHex" value="3078303034424636433400" -->
  <value name="sndCrushStimSound" hash="E7C54E67" type="String">0x004BF6C4</value> <!-- type="BinHex" value="3078303034424636433400" -->
  <value name="sndPierceHeadStimSound" hash="468F245B" type="String">0x004BF6C3</value> <!-- type="BinHex" value="3078303034424636433300" -->
  <value name="sndPierceFrontStimSound" hash="BA2AE49C" type="String">0x004BF6C3</value> <!-- type="BinHex" value="3078303034424636433300" -->
  <value name="sndPierceLeftStimSound" hash="88A3DAA6" type="String">0x004BF6C3</value> <!-- type="BinHex" value="3078303034424636433300" -->
  <value name="sndPierceRightStimSound" hash="7843F22F" type="String">0x004BF6C3</value> <!-- type="BinHex" value="3078303034424636433300" -->
```

We are going to remove the sounds for "sndBurnStimSound", "sndCrushStimSound", "sndPierceHeadStimSound", "sndPierceFrontStimSound", "sndPierceLeftStimSound" and "sndPierceRightStimSound". This involves changing their “String” value to “0xFFFFFFFF”.

Your completed section should look like this:

```
<object hash="8C369C01" type="PostFXSounds">
  <value name="sndtpPostFXSoundType" hash="FBCA8C9E" type="Int32">12</value> <!-- type="BinHex" value="0C000000" -->
  <value name="sndtpPostFXSoundType3D" hash="CFCF6113" type="Int32">-1</value> <!-- type="BinHex" value="FFFFFFF" -->
  <value name="sndBlurStimSound" hash="9B855391" type="String">0xFFFFFFFF</value> <!-- type="BinHex" value="3078464646464646464600" -->
  <value name="sndBurnStimSound" hash="1E9DF019" type="String">0xFFFFFFFF</value> <!-- type="BinHex" value="3078464646464646464600" -->
  <value name="sndCrushStimSound" hash="E7C54E67" type="String">0xFFFFFFFF</value> <!-- type="BinHex" value="3078464646464646464600" -->
  <value name="sndPierceHeadStimSound" hash="468F245B" type="String">0xFFFFFFFF</value> <!-- type="BinHex" value="3078464646464646464600" -->
  <value name="sndPierceFrontStimSound" hash="BA2AE49C" type="String">0xFFFFFFFF</value> <!-- type="BinHex" value="3078464646464646464600" -->
  <value name="sndPierceLeftStimSound" hash="88A3DAA6" type="String">0xFFFFFFFF</value> <!-- type="BinHex" value="3078464646464646464600" -->
  <value name="sndPierceRightStimSound" hash="7843F22F" type="String">0xFFFFFFFF</value> <!-- type="BinHex" value="3078464646464646464600" -->
```

Enemies

Enemy Weapons

gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)

Enemy weapons are controlled within the “<InventoryPacks>” section of this file.

There are different weapon packs here for the different enemy types, these are their titles:

```
<Pack name="assault">
<Pack name="shotgun">
<Pack name="RocketLauncher">
<Pack name="Mortar">
<Pack name="sniper">
```

Below each of these titles you’ll see lists of weapons. Each enemy has two lists, one each to control their secondary and primary weapons. Some enemy types have a section for special weapons rather than primary weapons but it functions the same.

Each of these lists is made up of individual weapons and difficulty levels, these are the individual components:

SecondaryWeapon/PrimaryWeapon/SpecialWeapon - These depend on the class of weapon you’re adding. “SecondaryWeapon” is always for secondaries but “PrimaryWeapon” or “SpecialWeapon” will depend on the enemy type, just follow what’s already there.

difficulty="xx" - There are 28 difficulty levels (0-27). You can remove this part if you want to make the same weapon set for every difficulty level. I don't know exactly how these apply to gameplay, whether it's based on geography, infamy level or position in the story. I've done a test before by setting levels 26 and 27 to only flamethrowers, driving around the map everyone had regular weapons but once I went into the Heart of Darkness for the final stages of the game everyone had the flamethrowers. I've always imagined the transition from map 1 to map 2 happening around difficulty level 14.

probability="xx" - You can set individual probabilities for each weapon within the difficulty levels. The probabilities for each difficulty level need to add up to 1. You can have as many weapons as you want with different probabilities or a single weapon with a probability of 1.

archetype="xx" - This is the name for each weapon. You can find these names within the xx_weaponproperties.xml file from entitylibrarypatchoverride.fcb. Don't forget that weapons that are specials for the player have separate versions for enemies that are primaries. These are normally marked by "_Merc" in the title but for the flamethrower you can use the multiplayer version marked with "_Multi" as that's already a primary.

This is an example section from Vanilla+:

```
<PrimaryWeapon difficulty="24" probability="0.05" archetype="weapons.Primary.G3KA4" />
<PrimaryWeapon difficulty="24" probability="0.15" archetype="weapons.Primary.AK47" />
<PrimaryWeapon difficulty="24" probability="0.33" archetype="weapons.Primary.FNFAL" />
<PrimaryWeapon difficulty="24" probability="0.31" archetype="weapons.Primary.M16" />
<PrimaryWeapon difficulty="24" probability="0.05" archetype="weapons.Special.PKM.PKM_Merc" />
<PrimaryWeapon difficulty="24" probability="0.10" archetype="weapons.Special.M249_Saw.M249_Saw_Merc" />
<PrimaryWeapon difficulty="24" probability="0.01" archetype="weapons.Primary.AK47.AK47_Gold" />
```

Changing all of this is lots of work and if you make a single mistake in the format of a line your file can stop packing properly and you won't know where you've gone wrong. I suggest planning it all out first. To make this easier I split the difficulties into sections (0-5, 6-10, 11-15, 16-20, 21-25, 26-27) and I made lists of it all in pencil so I could edit it and know what I want before working in the actual file.

	Makarov	40	25	0	0	0	0
Rocket Launcher	Star 45	25	15	10	0	0	0
Mortar	Desert Eagle	0	10	20	30	35	40
	M40	10	15	15	10	0	0
	Uzi	5	15	25	20	15	0
	MPS	5	10	25	40	50	60
	Sawed Off	15	10	5	0	0	0
	M79	0	0	0	0	0	0

Ammo drops

gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)

The amount of ammo dropped by enemies is controlled by the "ClipMultiplierForPickup" line of this file.

Each difficulty has a separate value, where you can specify what proportion of a single magazine each enemy will drop.

```
<ClipMultiplierForPickup Casual="2" Experimented="1" Hardcore="0.5" Infamous="0.25"/>
```

Grenade drops

gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)

The chance for enemies to drop grenades is controlled by the "ChanceToDropGrenade" line of this file.

Each difficulty has a separate value, where you can specify the proportional probability of an enemy to drop a grenade.

```
<ChanceToDropGrenade Casual="1" Experimented="0.5" Hardcore="0.33" Infamous="0.25"/>
```

Stealth - Enemy perception

xx_enemy_archetypes.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

The easiest way to make changes to the stealth system is to edit enemy perception. All of these changes are done in the file "xx_enemy_archetypes.xml", where each enemy has a separate entry. The entry titles are listed below, you can see there are separate entries for the different enemy types, ethnicities, and factions. In addition to the normal enemies in the red/blue factions there are entries for the spec-ops enemies encountered in a single mission early in the game and also assassination targets.

Blue_Faction.Assault_Caucasian
Blue_Faction.Assault_Nubian
Blue_Faction.CarlGustaf_Caucasian
Blue_Faction.CarlGustaf_Nubian
Blue_Faction.LightMachineGunner_Caucasian
Blue_Faction.LightMachineGunner_Nubian
Blue_Faction.MortarMan_Caucasian
Blue_Faction.MortarMan_Nubian
Blue_Faction.RocketMan_Caucasian
Blue_Faction.RocketMan_Nubian
Blue_Faction.ShotgunMan_Caucasian
Blue_Faction.ShotgunMan_Nubian
Blue_Faction.Sniper_Caucasian
Blue_Faction.Sniper_Nubian

Red_Faction.Assault_Caucasian
Red_Faction.Assault_Nubian
Red_Faction.CarlGustaf_Caucasian
Red_Faction.CarlGustaf_Nubian
Red_Faction.LightMachineGunner_Caucasian
Red_Faction.LightMachineGunner_Nubian
Red_Faction.MortarMan_Caucasian
Red_Faction.MortarMan_Nubian
Red_Faction.RocketMan_Caucasian
Red_Faction.RocketMan_Nubian
Red_Faction.ShotgunMan_Caucasian
Red_Faction.ShotgunMan_Nubian
Red_Faction.Sniper_Caucasian
Red_Faction.Sniper_Nubian

Special.SpecOps_Assault
Special.SpecOps_Shotgun

Missions.Assassination_Target

Perception pre-combat

xx_enemy_archetypes.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

This is the main stat that I suggest editing to improve stealth, I personally found a value of 0.6 to be a good balance for the enemies to not spot you immediately while also not being blind.

Enemy perception pre-combat is controlled by the “fPreCombatMultiplier” stat in the “SensorySystem” section.

This works as a proportional modifier, so any value lower than 1 will decrease enemy perception pre-combat and a value of 0.5 will decrease enemy perception pre-combat by 50%.

```
<object type="SensorySystem">
  <object type="FOVParameters">
    <object type="FOVMultipliers">
      <value name="fPreCombatMultiplier" type="Float">0.75</value>
      <value name="fCombatMultiplier" type="Float">1</value>
      <value name="fPostCombatMultiplier" type="Float">1.25</value>
      <value name="fPlayerInVehicleMultiplier" type="Float">2</value>
      <value name="fNightTimeMultiplier" type="Float">0.5</value>
      <value name="fSniperLengthMultiplier" type="Float">6</value>
      <value name="fSniperAngleMultiplier" type="Float">0.15</value>
    </object>
  </object>
```

Perception at night

xx_enemy_archetypes.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

Enemy perception at night is controlled by the “fNightTimeMultiplier” stat in the “SensorySystem” section.

This works as a proportional modifier, so any value lower than 1 will decrease enemy perception at night and a value of 0.5 will decrease enemy perception at night by 50%.

```
<object type="SensorySystem">
  <object type="FOVParameters">
    <object type="FOVMultipliers">
      <value name="fPreCombatMultiplier" type="Float">0.75</value>
      <value name="fCombatMultiplier" type="Float">1</value>
      <value name="fPostCombatMultiplier" type="Float">1.25</value>
      <value name="fPlayerInVehicleMultiplier" type="Float">2</value>
      <value name="fNightTimeMultiplier" type="Float">0.5</value>
      <value name="fSniperLengthMultiplier" type="Float">6</value>
      <value name="fSniperAngleMultiplier" type="Float">0.15</value>
    </object>
  </object>
```

Overall perception

xx_enemy_archetypes.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

Overall enemy perception is controlled by separate stats for each location type. There are stats for focussed vision and peripheral visions, and you can edit the length and angle of each of these. You can make these out yourself in the example below.

I do not recommend changing these settings, decreasing overall vision can make enemies behave strangely in combat.

```
<object type="DesertFOV">
  <object type="FocusFOV">
    <value name="fLength" type="Float">60</value>
    <value name="fAngle" type="Float">60</value>
  </object>
  <object type="PeripheralFOV">
    <value name="fLength" type="Float">40</value>
    <value name="fAngle" type="Float">120</value>
  </object>
</object>
<object type="SavannahFOV">
  <object type="FocusFOV">
    <value name="fLength" type="Float">40</value>
    <value name="fAngle" type="Float">60</value>
  </object>
  <object type="PeripheralFOV">
    <value name="fLength" type="Float">30</value>
    <value name="fAngle" type="Float">120</value>
  </object>
</object>
<object type="JungleFOV">
  <object type="FocusFOV">
    <value name="fLength" type="Float">30</value>
    <value name="fAngle" type="Float">60</value>
  </object>
  <object type="PeripheralFOV">
    <value name="fLength" type="Float">20</value>
    <value name="fAngle" type="Float">120</value>
  </object>
</object>
```

AI Behaviours

gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)

There are a number of enemy behaviours that can have their likelihoods individually customised.

These are all within the “AdaptativeBehavior” section.

You can set percentage chances for the same 28 difficulty levels that the enemy weapon system is based on. I don’t know exactly how these apply to gameplay, whether it’s based on geography, infamy level or position in the story. I’ve done a test before by setting levels 26 and 27 to only flamethrowers, driving around the map everyone had regular weapons but once I went into the Heart of Darkness for the final stages of the game everyone had the flamethrowers. I’ve always imagined the transition from map 1 to map 2 happening around difficulty level 14.

The labels for these behaviours are mostly vague, so my descriptions of what they mean may well be wrong. There are also behaviours I haven’t described that I don’t fully understand. Please someone test them and figure them out!

```
<AdaptativeBehavior>
  <Item behavior="Grenade" ...
  <Item behavior="GrenadeAndBuilding" ...
  <Item behavior="ChaseWithVehicle" ...
  <Item behavior="ReachSniperWithVehicle" ...
  <Item behavior="MountedWeapon" ...
  <Item behavior="ShootFlare" ...
  <Item behavior="ShootInterestingObject" ...
  <Item behavior="RescueVictim" ...
  <Item behavior="RangeWeapon" ...
  <Item behavior="VehicleChaseLevel2" ...
  <Item behavior="VehicleChaseLevel3" ...
  <Item behavior="LongRangeVehicle" ...
</AdaptativeBehavior>
```

Combat

gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)

There are four behaviours that apply to combat:

- “MountedWeapon” for using mounted weapons.
- “ShootFlare” for calling reinforcements.
- “RescueVictim” for rescuing their injured friends.

“RangeWeapon” for ranging mortars with a smoke shell before firing an explosive shell.

Grenade throwing

gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)

There are two behaviours that apply to grenade throwing:

- “Grenade” for regular throws.
- “GrenadeAndBuilding” for throwing grenades into buildings.

Vehicle use

gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)

There are two behaviours that apply to vehicle use:

- “ChaseWithVehicle” for chasing the player when they drive through checkpoints.
- “ReachSniperWithVehicle” for using a vehicle to close distance when they are attacked from far away.

Ethnicity

xx_enemy_archetypes.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

By default, each enemy type for each faction has both a white and black variation. It is possible to change this, so every enemy type either overall or of a given faction is the same ethnicity.

Enemy ethnicity is controlled by the “CGraphicKitComponent” section of each enemy type. You can overwrite this section with either ethnicity that you want the enemy to be.

This is that section for a white enemy:

```
<object type="CGraphicKitComponent">
  <value name="hidHasAliasName" type="Bool">False</value>
  <value name="bRadomize" type="Bool">True</value>
  <object type="Tags">
    <object type="SpecializationTag">
      <value hash="9B35862A" type="String">caucasian</value>
      <value name="sTag" type="Hash">E3A43C0B</value>
    </object>
    <object type="SpecializationTag">
      <value hash="9B35862A" type="String"></value>
      <value name="sTag" type="Hash">FFFFFFFF</value>
    </object>
  </object>
  <object type="PartOverwrite">
    <object type="ActivePartOverwrite">
      <value hash="CE56B704" type="String">vgault-P-2008041562096342</value>
      <value name="PartID" type="Hash">1F4B6AA3</value>
      <value name="TextureIndex" type="UInt32">4</value>
      <value name="ColorIndex" type="UInt32">0</value>
    </object>
    <object type="ActivePartOverwrite">
      <value hash="CE56B704" type="String">ycloutier-P-2007072458454117</value>
      <value name="PartID" type="Hash">AE49CAFF</value>
      <value name="TextureIndex" type="UInt32">12</value>
      <value name="ColorIndex" type="UInt32">4294967295</value>
    </object>
    <object type="ActivePartOverwrite">
      <value hash="CE56B704" type="String">vgault-P-2008031064983593</value>
      <value name="PartID" type="Hash">F4A2B576</value>
      <value name="TextureIndex" type="UInt32">0</value>
      <value name="ColorIndex" type="UInt32">4294967295</value>
    </object>
    <object type="ActivePartOverwrite">
      <value hash="CE56B704" type="String">ycloutier-P-2007070548404363</value>
      <value name="PartID" type="Hash">F22507DF</value>
      <value name="TextureIndex" type="UInt32">3</value>
      <value name="ColorIndex" type="UInt32">1</value>
    </object>
    <object type="ActivePartOverwrite">
      <value hash="CE56B704" type="String">vgault-P-2008031435106617</value>
      <value name="PartID" type="Hash">61D6287C</value>
      <value name="TextureIndex" type="UInt32">0</value>
      <value name="ColorIndex" type="UInt32">4294967295</value>
    </object>
    <object type="ActivePartOverwrite">
      <value hash="CE56B704" type="String">ycloutier-P-2007072941899753</value>
      <value name="PartID" type="Hash">21E0E0ED</value>
      <value name="TextureIndex" type="UInt32">4294967295</value>
      <value name="ColorIndex" type="UInt32">4294967295</value>
    </object>
    <object type="ActivePartOverwrite">
      <value hash="CE56B704" type="String">ycloutier-P-2007072957240043</value>
```

```
<value name="PartID" type="Hash">B6CD5AD0</value>
<value name="TextureIndex" type="UInt32">4294967295</value>
<value name="ColorIndex" type="UInt32">4294967295</value>
</object>
<object type="ActivePartOverwrite">
  <value hash="CE56B704" type="String">vgault-P-2008020655242910</value>
  <value name="PartID" type="Hash">CE4D2C24</value>
  <value name="TextureIndex" type="UInt32">4294967295</value>
  <value name="ColorIndex" type="UInt32">4294967295</value>
</object>
<object type="ActivePartOverwrite">
  <value hash="CE56B704" type="String">ycloutier-P-2007070330379177</value>
  <value name="PartID" type="Hash">F8A82C68</value>
  <value name="TextureIndex" type="UInt32">4294967295</value>
  <value name="ColorIndex" type="UInt32">4294967295</value>
</object>
<object type="ActivePartOverwrite">
  <value hash="CE56B704" type="String">vgault-P-2008060252847888</value>
  <value name="PartID" type="Hash">AE41BA3C</value>
  <value name="TextureIndex" type="UInt32">4294967295</value>
  <value name="ColorIndex" type="UInt32">4294967295</value>
</object>
<object type="ActivePartOverwrite">
  <value hash="CE56B704" type="String">vgault-P-2008042337976794</value>
  <value name="PartID" type="Hash">5E4515E4</value>
  <value name="TextureIndex" type="UInt32">4294967295</value>
  <value name="ColorIndex" type="UInt32">4294967295</value>
</object>
<object type="ActivePartOverwrite">
  <value hash="CE56B704" type="String"></value>
  <value name="PartID" type="Hash">FFFFFFFF</value>
  <value name="TextureIndex" type="UInt32">4294967295</value>
  <value name="ColorIndex" type="UInt32">4294967295</value>
</object>
</object>
</object>
```

This is that section for a black enemy:

```
<object type="CGraphicKitComponent">
  <value name="hidHasAliasName" type="Bool">False</value>
  <value name="bRadomize" type="Bool">True</value>
  <object type="Tags">
    <object type="SpecializationTag">
      <value hash="9B35862A" type="String">nubian</value>
      <value name="sTag" type="Hash">B2CB79A8</value>
    </object>
    <object type="SpecializationTag">
      <value hash="9B35862A" type="String"></value>
      <value name="sTag" type="Hash">FFFFFFFF</value>
    </object>
  </object>
  <object type="PartOverwrite">
    <object type="ActivePartOverwrite">
      <value hash="CE56B704" type="String">htrandafir-P-2008060635626686</value>
      <value name="PartID" type="Hash">3E52333F</value>
      <value name="TextureIndex" type="UInt32">4294967295</value>
      <value name="ColorIndex" type="UInt32">4294967295</value>
    </object>
    <object type="ActivePartOverwrite">
      <value hash="CE56B704" type="String">ycloutier-P-2007072362488160</value>
      <value name="PartID" type="Hash">83B487F6</value>
      <value name="TextureIndex" type="UInt32">0</value>
      <value name="ColorIndex" type="UInt32">4294967295</value>
    </object>
    <object type="ActivePartOverwrite">
      <value hash="CE56B704" type="String">vgault-P-2008031137328325</value>
      <value name="PartID" type="Hash">A8E10946</value>
      <value name="TextureIndex" type="UInt32">0</value>
      <value name="ColorIndex" type="UInt32">4294967295</value>
    </object>
    <object type="ActivePartOverwrite">
      <value hash="CE56B704" type="String">ycloutier-P-2007070548986148</value>
      <value name="PartID" type="Hash">72A2F82F</value>
      <value name="TextureIndex" type="UInt32">2</value>
      <value name="ColorIndex" type="UInt32">3</value>
    </object>
    <object type="ActivePartOverwrite">
      <value hash="CE56B704" type="String">vgault-P-2008031435157790</value>
      <value name="PartID" type="Hash">46F5B5F5</value>
      <value name="TextureIndex" type="UInt32">0</value>
      <value name="ColorIndex" type="UInt32">4294967295</value>
    </object>
    <object type="ActivePartOverwrite">
      <value hash="CE56B704" type="String">ycloutier-P-2007072941899753</value>
      <value name="PartID" type="Hash">21E0E0ED</value>
      <value name="TextureIndex" type="UInt32">4294967295</value>
      <value name="ColorIndex" type="UInt32">4294967295</value>
    </object>
  </object>
```

```
<object type="ActivePartOverwrite">
  <value hash="CE56B704" type="String">ycloutier-P-2007072954271880</value>
  <value name="PartID" type="Hash">439612F6</value>
  <value name="TextureIndex" type="UInt32">4294967295</value>
  <value name="ColorIndex" type="UInt32">4294967295</value>
</object>
<object type="ActivePartOverwrite">
  <value hash="CE56B704" type="String">vgault-P-2008020655242910</value>
  <value name="PartID" type="Hash">CE4D2C24</value>
  <value name="TextureIndex" type="UInt32">4294967295</value>
  <value name="ColorIndex" type="UInt32">4294967295</value>
</object>
<object type="ActivePartOverwrite">
  <value hash="CE56B704" type="String">ycloutier-P-2007070330379177</value>
  <value name="PartID" type="Hash">F8A82C68</value>
  <value name="TextureIndex" type="UInt32">4294967295</value>
  <value name="ColorIndex" type="UInt32">4294967295</value>
</object>
<object type="ActivePartOverwrite">
  <value hash="CE56B704" type="String">vgault-P-2008060252847888</value>
  <value name="PartID" type="Hash">AE41BA3C</value>
  <value name="TextureIndex" type="UInt32">4294967295</value>
  <value name="ColorIndex" type="UInt32">4294967295</value>
</object>
<object type="ActivePartOverwrite">
  <value hash="CE56B704" type="String">vgault-P-2008060685370512</value>
  <value name="PartID" type="Hash">2470B3C1</value>
  <value name="TextureIndex" type="UInt32">4294967295</value>
  <value name="ColorIndex" type="UInt32">4294967295</value>
</object>
<object type="ActivePartOverwrite">
  <value hash="CE56B704" type="String"></value>
  <value name="PartID" type="Hash">FFFFFFFF</value>
  <value name="TextureIndex" type="UInt32">4294967295</value>
  <value name="ColorIndex" type="UInt32">4294967295</value>
</object>
</object>
</object>
```

Reinforcements

Enemy type

gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)

The enemy types of reinforcements are controlled by the middle section of the first two values in the “ReinforcementArchetypes” section

You can swap the part that in the example below says “Assault” with another for a different enemy type.

It can be swapped with these values:

- Assault
- ShotgunMan
- Sniper
- RocketMan
- MortarMan

```
<ReinforcementArchetypes>
  <Archetype name="enemy_archetypes.Red_Faction.Assault_Caucasian" type="redmerc" />
  <Archetype name="enemy_archetypes.Red_Faction.Assault_Caucasian" type="BlueMerc" />
  <Archetype name="vehicle.Land.Rover" type="vehicle" />
</ReinforcementArchetypes>
```

Enemy ethnicity

gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)

The ethnicities of enemies within reinforcements are controlled by the last section of the first two values in the “ReinforcementArchetypes” section

The part that in the example below says “Caucasian”, you can keep it as that for the enemy to be white, or change it to “Nubian” for the enemy to be black.

```
<ReinforcementArchetypes>
  <Archetype name="enemy_archetypes.Red_Faction.Assault_Caucasian" type="redmerc" />
  <Archetype name="enemy_archetypes.Red_Faction.Assault_Caucasian" type="BlueMerc" />
  <Archetype name="vehicle.Land.Rover" type="vehicle" />
</ReinforcementArchetypes>
```

Vehicle type

gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)

The vehicles that reinforcements use are controlled by the last value in the “ReinforcementArchetypes” section

You can swap the part that in the example below says “vehicle.Land.Rover” with another for a different vehicle.

```
<ReinforcementArchetypes>
  <Archetype name="enemy_archetypes.Red_Faction.Assault_Caucasian" type="redmerc" />
  <Archetype name="enemy_archetypes.Red_Faction.Assault_Caucasian" type="BlueMerc" />
  <Archetype name="vehicle.Land.Rover" type="vehicle" />
</ReinforcementArchetypes>
```

It can be swapped with these values:

Big truck	vehicle.Land.BigTruck
	vehicle.Land.BigTruck.Tanker
Dune buggy	vehicle.Land.Buggy
Car	vehicle.Land.Datsun
ATV	vehicle.Land.DLC_Vehicle1_DLC1
Jeep Liberty	vehicle.Land.JeepLiberty
	vehicle.Land.JeepLiberty.VIP
Jeep Wrangler	vehicle.Land.JeepWrangler
Assault truck	vehicle.Land.Rover.M249_Mounted
	vehicle.Land.Rover.M2_Mounted
	vehicle.Land.Rover.MK19_Mounted
Utility truck/Unimog	vehicle.Land.DLC_Vehicle2_DLC1 (singleplayer version, with grey paint and mounted M2)
	vehicle.Land.DLC_Vehicle2_DLC1.Multi_M249_Mounted
	vehicle.Land.DLC_Vehicle2_DLC1.Multi_M2_Mounted
	vehicle.Land.DLC_Vehicle2_DLC1.Multi_MK19_Mounted

Patrols

Editing the patrols works by swapping out details of those in the default game, and there are two ways we can do this. We can use a file that combines the patrols of maps 1 and 2 into one list and make overall edits, or we can use seperate files for each map and edit them separately.

This works because most patrols are featured in both maps. So, for example, both maps have a patrol with the title “Patrols.Rover.M249_Mounted”. If you use the method that combines the maps, whatever you edit “Patrols.Rover.M249_Mounted” to will be the same in both. If you seperate them you can make that patrol different in each map.

I would suggest editing them separately for maximum variety and it’s maybe the one time that doing separate edits for each map seems worthwhile. Instructions for doing separate map edits can be found under the title “Making edits specific to each map” in the “Editing the base game” section above.

When editing both maps together you make edits to “xx_GhostPatrols.xml” within “entitylibrarypatchoverride.fcb” (\patch_unpack\generated\).

When editing the maps separately there are two individual files:

To edit map 1 patrols you make edits to “10_GhostPatrols.xml” within “entitylibrary.fcb” (\patch_unpack\worlds\world1\generated\).

To edit map 2 patrols you make edits to “10_GhostPatrols.xml” within “entitylibrary.fcb” (\patch_unpack\worlds\world2\generated\).

Entry titles

These are the entry titles for both methods, along with their respective vehicles:

Both maps combined	
Patrol title	Vehicle

Convoy.AssassinationTarget	vehicle.Land.JeepLiberty
Convoy.ConvoyTarget	vehicle.Land.BigTruck
Convoy.EscortVehicle	vehicle.Land.Rover
MissionSpecific.CopKiller	vehicle.Land.JeepLiberty
Patrols.Datsun	vehicle.Land.Datsun
Patrols.JeepLiberty	vehicle.Land.JeepLiberty
Patrols.JeepWrangler	vehicle.Land.JeepWrangler
Patrols.Rover	vehicle.Land.Rover
Patrols.Rover.M249_Mounted	vehicle.Land.Rover.M249_Mounted
Patrols.Rover.M2_Mounted	vehicle.Land.Rover.M2_Mounted
Patrols.Rover.MK19_Mounted	vehicle.Land.Rover.MK19_Mounted
Patrols.SwampBoat	vehicle.Sea.SwampBoat
Patrols.SwampBoat.M249_Mounted	vehicle.Sea.SwampBoat.M249_Mounted
Patrols.SwampBoat.M2_Mounted	vehicle.Sea.SwampBoat.M2_Mounted
Patrols.SwampBoat.MK19_Mounted	vehicle.Sea.SwampBoat.MK19_Mounted
Patrols.FishingBoat	vehicle.Sea.FishingBoat
Patrols.FishingBoat.M249_Mounted	vehicle.Sea.FishingBoat.M249_Mounted
Patrols.FishingBoat.M2_Mounted	vehicle.Sea.FishingBoat.M2_Mounted
Patrols.FishingBoat.MK19_Mounted	vehicle.Sea.FishingBoat.MK19_Mounted

Separate maps	
Map 1	
Patrol title	Vehicle
Convoy.AssassinationTarget	vehicle.Land.JeepLiberty
Convoy.ConvoyTarget	vehicle.Land.BigTruck
Convoy.EscortVehicle	vehicle.Land.Rover
MissionSpecific.CopKiller	vehicle.Land.JeepLiberty
Patrols.Datsun	vehicle.Land.Datsun
Patrols.JeepWrangler	vehicle.Land.JeepWrangler
Patrols.Rover	vehicle.Land.Rover
Patrols.Rover.M249_Mounted	vehicle.Land.Rover.M249_Mounted
Patrols.SwampBoat	vehicle.Sea.SwampBoat
Patrols.SwampBoat.M249_Mounted	vehicle.Sea.SwampBoat.M249_Mounted
Map 2	
Patrol title	Vehicle
Convoy.AssassinationTarget	vehicle.Land.JeepLiberty
Convoy.ConvoyTarget	vehicle.Land.BigTruck
Convoy.EscortVehicle	vehicle.Land.Rover
Patrols.Datsun	vehicle.Land.Datsun
Patrols.JeepLiberty	vehicle.Land.JeepLiberty
Patrols.JeepWrangler	vehicle.Land.JeepWrangler
Patrols.Rover	vehicle.Land.Rover
Patrols.Rover.M249_Mounted	vehicle.Land.Rover.M249_Mounted
Patrols.Rover.M2_Mounted	vehicle.Land.Rover.M2_Mounted
Patrols.Rover.MK19_Mounted	vehicle.Land.Rover.MK19_Mounted
Patrols.SwampBoat.M249_Mounted	vehicle.Sea.SwampBoat.M249_Mounted

Patrols.SwampBoat.M2_Mounted	vehicle.Sea.SwampBoat.M2_Mounted
Patrols.SwampBoat.MK19_Mounted	vehicle.Sea.SwampBoat.MK19_Mounted
Patrols.FishingBoat.M249_Mounted	vehicle.Sea.FishingBoat.M249_Mounted

Vehicle type

Decoding required

Combined maps

xx_GhostPatrols.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

Separate maps

Map 1: 10_GhostPatrols.xml < entitylibrary.fcb (\patch_unpack\worlds\world1\generated\)

Map 2: 10_GhostPatrols.xml < entitylibrary.fcb (\patch_unpack\worlds\world2\generated\)

The vehicles used by each patrol are controlled by the “archVehicle” value in the “Ghost” section.

```
<object hash="C292BFA5" type="Ghost">
  <value name="archVehicle" hash="27D0A9BA" type="String">vehicle.Land.Datsun</value>
  <value name="entPathToFollow" hash="5C91004B" type="Int64">-1</value> <!-- type="BinHex" value="FFFFFFFFFFFFFFFF" -->
  <value name="vectorBBoxMin" hash="BC35D67A" type="Vector3">
```

You can replace the existing values with those below:

Big truck	vehicle.Land.BigTruck
	vehicle.Land.BigTruck.Tanker
Dune buggy	vehicle.Land.Buggy
Car	vehicle.Land.Datsun
ATV	vehicle.Land.DLC_Vehicle1_DLC1
Jeep Liberty	vehicle.Land.JeepLiberty
	vehicle.Land.JeepLiberty.VIP
Jeep Wrangler	vehicle.Land.JeepWrangler
Assault truck	vehicle.Land.Rover.M249_Mounted
	vehicle.Land.Rover.M2_Mounted
	vehicle.Land.Rover.MK19_Mounted
Utility truck/Unimog	vehicle.Land.DLC_Vehicle2_DLC1 (singleplayer version, with grey paint and mounted M2)
	vehicle.Land.DLC_Vehicle2_DLC1.Multi_M249_Mounted
	vehicle.Land.DLC_Vehicle2_DLC1.Multi_M2_Mounted
	vehicle.Land.DLC_Vehicle2_DLC1.Multi_MK19_Mounted
Fishing boat	vehicle.Sea.FishingBoat.M249_Mounted
	vehicle.Sea.FishingBoat.M2_Mounted
	vehicle.Sea.FishingBoat.MK19_Mounted
Swamp boat	vehicle.Sea.SwampBoat.M249_Mounted
	vehicle.Sea.SwampBoat.M2_Mounted
	vehicle.Sea.SwampBoat.MK19_Mounted

Faction (Enemy infighting)

Decoding required

Combined maps

xx_GhostPatrols.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

Separate maps

Map 1: 10_GhostPatrols.xml < entitylibrary.fcb (\patch_unpack\worlds\world1\generated\)

Map 2: 10_GhostPatrols.xml < entitylibrary.fcb (\patch_unpack\worlds\world2\generated\)

The faction of the patrols is controlled by the start of the “archPassenger” values in the “Passengers” section.

By default the drivers/gunners belong to the blue faction and their values begin with “enemy_archetypes.Blue_”. If you change this section to the red faction, so “enemy_archetypes.Red_”, then the patrol will attack camps that they drive through.

Don’t forget to change all of the passengers to the same faction, or as soon as the patrol spawns they will all get out of the vehicle and shoot each other.

```
<object hash="AC0A8D5A" type="Passengers">
  <object hash="B91E6A7E" type="Passenger">
    <value name="archPassenger" hash="4071905F" type="String">enemy_archetypes.Blue_Faction.Assault_Caucasian</value>
  </object>
  <object hash="B91E6A7E" type="Passenger">
    <value name="archPassenger" hash="4071905F" type="String"></value> <!-- type="BinHex" value="00" -->
  </object>
```

Enemy type

Decoding required

Combined maps

```
xx_GhostPatrols.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
```

Separate maps

```
Map 1: 10_GhostPatrols.xml < entitylibrary.fcb (\patch_unpack\worlds\world1\generated\)
Map 2: 10_GhostPatrols.xml < entitylibrary.fcb (\patch_unpack\worlds\world2\generated\)
```

The enemy types within the patrols are controlled by the middle of the “archPassenger” values in the “Passengers” section.

You can swap the part that in the example below says “Assault” with another for a different enemy type.

It can be swapped with these values:

- Assault
- ShotgunMan
- Sniper
- RocketMan
- MortarMan

```
<object hash="AC0A8D5A" type="Passengers">
  <object hash="B91E6A7E" type="Passenger">
    <value name="archPassenger" hash="4071905F" type="String">enemy_archetypes.Blue_Faction.Assault_Caucasian</value>
  </object>
  <object hash="B91E6A7E" type="Passenger">
    <value name="archPassenger" hash="4071905F" type="String"></value> <!-- type="BinHex" value="00" -->
  </object>
```

Enemy ethnicity

Decoding required

Combined maps

```
xx_GhostPatrols.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
```

Separate maps

```
Map 1: 10_GhostPatrols.xml < entitylibrary.fcb (\patch_unpack\worlds\world1\generated\)
Map 2: 10_GhostPatrols.xml < entitylibrary.fcb (\patch_unpack\worlds\world2\generated\)
```

The ethnicities of the enemies within the patrols are controlled by the end of the “archPassenger” values in the “Passengers” section.

The part that in the example below says “Caucasian”, you can keep it as that for the enemy to be white, or change it to “Nubian” for the enemy to be black.

```
<object hash="AC0A8D5A" type="Passengers">
  <object hash="B91E6A7E" type="Passenger">
    <value name="archPassenger" hash="4071905F" type="String">enemy_archetypes.Blue_Faction.Assault_Caucasian</value>
  </object>
  <object hash="B91E6A7E" type="Passenger">
    <value name="archPassenger" hash="4071905F" type="String"></value> <!-- type="BinHex" value="00" -->
  </object>
```

Guide - How to create new driver/gunner enemy types

This guide will cover creating new enemy types. The only way I know how to insert new enemy types is into patrols, so that is why this is under the title of driver/gunner titles. If you can find a way of inserting enemies into the rest of the game you can use the enemy types created here.

Step 1: Creating a new enemy type

```
xx_enemy_archetypes.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
```

The first step here is to copy an existing enemy type. There are slight visual differences between enemy types (assault, shotgun, sniper etc) and you also need to choose what ethnicity you want your new enemy type to be.

Once you’ve decided this, copy the entire entry for that enemy type and paste it at the top of this file.

The first edit we are going to do is changing the entry title. There are two values for this under the “Name” and “hidName” values, shown in the example below:

```
<object hash="256A1FF9">
  <value name="Name" type="String">Blue_Faction.Assault_Caucasian</value>
  <object type="Entity">
    <value name="hidName" type="String">enemy_archetypes.Blue_Faction.Assault_Caucasian</value>
    <value name="disEntityId" type="UInt64">263</value>
```

You can change these to anything you like but you will need these values later on so make them something simple, like I have done in the example below:

```
<object hash="256A1FF9">
  <value name="Name" type="String">Enemy_Driver</value>
  <object type="Entity">
    <value name="hidName" type="String">enemy_archetypes.Enemy_Driver</value>
    <value name="disEntityId" type="UInt64">263</value>
```

The main way you can customise your new enemy type is what weapons they use. We can’t create new inventory packs, I will explain why shortly, so we need to reuse an existing one. The least used inventory pack is the Carl Gustaf one. Only one enemy entry uses it and we can easily swap them to the generic rocket launcher inventory pack.

The first step to doing this is editing our new enemy type. Within your new entry search for “Inventory”. You will find a section like the one below:

```
<object type="Inventory">
  <value hash="8C965C28" type="String">assault</value>
  <value name="packInventoryPack" type="Hash">CCE9D60C</value>
  <value name="archGPSVehicleArchetype" type="String"></value> <!-- type="BinHex" value="00" -->
  <value name="bUnlimitedAmmo" type="Bool">True</value>
  <value name="bAutoReload" type="Bool">False</value>
  <value name="bAutoDraw" type="Bool">False</value>
  <value hash="130CDED8" type="String"></value>
  <value name="sInitialWeaponCategory" type="Hash">FFFFFFFF</value>
</object>
```

There are two values that control the inventory packs and I have highlighted them in the example above. We can’t create new “packInventoryPack” values, and that is why we must reuse existing packs.

To change this to the Carl Gustaf pack we are going to change the “8C965C28” value to “CarlGustav” and the “packInventoryPack” value to “B3E1E534”, as shown in the example below:

```
<object type="Inventory">
  <value hash="8C965C28" type="String">CarlGustav</value>
  <value name="packInventoryPack" type="Hash">B3E1E534</value>
  <value name="archGPSVehicleArchetype" type="String"></value> <!-- type="BinHex" value="00" -->
  <value name="bUnlimitedAmmo" type="Bool">True</value>
  <value name="bAutoReload" type="Bool">False</value>
  <value name="bAutoDraw" type="Bool">False</value>
  <value hash="130CDED8" type="String"></value>
  <value name="sInitialWeaponCategory" type="Hash">FFFFFFFF</value>
</object>
```

Of course we also need to redirect the existing Carl Gustav enemy so search for “CarlGustav” and you will find there is a single other entry. Change that section to the following:

```
<object type="Inventory">
  <value hash="8C965C28" type="String">RocketLauncher</value>
  <value name="packInventoryPack" type="Hash">6F2D03DF</value>
  <value name="archGPSVehicleArchetype" type="String"></value> <!-- type="BinHex" value="00" -->
  <value name="bUnlimitedAmmo" type="Bool">True</value>
  <value name="bAutoReload" type="Bool">False</value>
  <value name="bAutoDraw" type="Bool">False</value>
  <value hash="130CDED8" type="String"></value>
  <value name="sInitialWeaponCategory" type="Hash">FFFFFFFF</value>
</object>
```

Step 2: Editing the Carl Gustaf inventory pack

gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)

In this file search for “<Pack name=“CarlGustav”>” and you will find the right section.

The steps for editing this are the same as the other enemy inventory packs, instructions for which can be found [here](#). You will see that by default the Carl Gustaf section is fairly empty, so you will have to build it mostly from scratch.

Step 3: Adding the new enemy types into the patrols

Decoding required

Combined maps

xx_GhostPatrols.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

Separate maps

Map 1: 10_GhostPatrols.xml < entitylibrary.fcb (\patch_unpack\worlds\world1\generated\)

Map 2: 10_GhostPatrols.xml < entitylibrary.fcb (\patch_unpack\worlds\world2\generated\)

The steps for this are largely the same as adding other enemy types into the patrols, instructions for which can be found [here](#). The only thing that’s different is that you use the “hidName” values you used in “xx_enemy_archetypes.xml”. In my example above the value would be “enemy_archetypes.Enemy_Driver”.

Guide - How to create a friendly faction

This guide will cover creating new friendly npcs that can then be inserted into the patrols to simulate a friendly faction.

Step 1: Creating friendly npcs

Decoding required

xx_buddies.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

Our first step to creating new npcs is choosing what we want them to look like. This file contains unique buddies that all look the same and non-unique buddies whose appearance is randomly generated. For our purpose the non-unique buddies are obviously ideal, so these are your choices:

- Civilians.Female_Civilian_NoDress
- Civilians.Female_Civilian_WithDress
- Civilians.Male_Civilian

It might also be possible to edit the unique buddies so parts of them are randomly generated, but you’ll have to figure that out. You could use the enemy entries from “xx_enemy_archetypes.xml” but then you have a problem that your new npcs aren’t visually distinct.

For this guide we’ll be creating female npcs using the existing “Civilians.Female_Civilian_WithDress” entry. The first step is copy this whole section and paste it at the top of the file. We are going to edit the entry titles of this, by default it looks like this:

```
<object hash="256A1FF9">
  <value name="Name" type="String">Civilians.Female_Civilian_WithDress</value>
  <object type="Entity">
    <value name="hidName" type="String">buddies.Civilians.Female_Civilian_WithDress</value>
    <value name="disEntityId" type="UInt64">75</value>
```

We are going to edit the “Name” and “hidName” values, it can be anything you want but we need these later on so make it something simple. It should look something like the example below:

```
<object hash="256A1FF9">
  <value name="Name" type="String">Friendlyfighter_Female</value>
  <object type="Entity">
    <value name="hidName" type="String">buddies.Friendlyfighter_Female</value>
    <value name="disEntityId" type="UInt64">75</value>
```

Now, there are a few sections of this entry that we need to change so this npc has the brains of a regular enemy but won’t attack like a buddy. I’ve found the sections we are going to use for this already, so I’ll just tell you what sections to replace with what.

1. “Inventory”

This section controls the npc’s weapons. By default it looks like this:

```
<object type="Inventory">
<value hash="8C965C28" type="String"></value>
<value name="packInventoryPack" type="Hash">FFFFFFFF</value>
<value name="archGPSVehicleArchetype" type="String"></value> <!-- type="BinHex" value="00" -->
<value name="bUnlimitedAmmo" type="Bool">False</value>
<value name="bAutoReload" type="Bool">False</value>
<value name="bAutoDraw" type="Bool">False</value>
<value hash="130CED8" type="String"></value>
<value name="sInitialWeaponCategory" type="Hash">FFFFFFFF</value>
</object>
```

You need to choose what weapons you want your npcs to have. You can give them an existing enemy intentory pack or create a new one.

If you want to create a new one follow the instructions in the [How to create new driver/gunner enemy types](#) guide.

To give them an existing inventory pack then you need to edit the “8C965C28” and “packInventoryPack” values. For the different inventory packs they are as follows:

Assault: “8C965C28” = “assault” / “packInventoryPack” = “CCE9D60C”

Shotgun: “8C965C28” = “shotgun” / “packInventoryPack” = “EEAE53E1”

Sniper: “8C965C28” = “sniper” / “packInventoryPack” = “AE2848CB”

Rocket Launcher: “8C965C28” = “RocketLauncher” / “packInventoryPack” = “6F2D03DF”

Mortar: “8C965C28” = “Mortar” / “packInventoryPack” = “4945BAE0”

We also need to change the “bUnlimitedAmmo” value to “True”.

A finished section would look something like this:

```
<object type="Inventory">
  <value hash="8C965C28" type="String">assault</value>
  <value name="packInventoryPack" type="Hash">CCE9D60C</value>
  <value name="archGPSVehicleArchetype" type="String"></value> <!-- type="BinHex" value="00" -->
  <value name="bUnlimitedAmmo" type="Bool">True</value>
  <value name="bAutoReload" type="Bool">False</value>
  <value name="bAutoDraw" type="Bool">False</value>
  <value hash="130CDED8" type="String"></value>
  <value name="sInitialWeaponCategory" type="Hash">FFFFFFFF</value>
</object>
```

2. “CAgent” and “CGameAgent”

These sections control the npc’s ai and movement. By default they look like this:

```
<object type="CAgent">
  <value hash="24B313D8" type="String">::SpecialCharacter/BrainSpecialCharacter</value>
  <value name="Brain" type="BinHex">3F6EB6E6</value>
  <value hash="071B548C" type="String">scripts\game\newbrains\specialcharacter.ai.rml</value>
  <value name="aiwsBrainWorkspace" type="Hash">47207CF3</value>
  <object type="PersonalityComponent">
    <value hash="2B928622" type="String">CHumanPersonality</value>
    <value name="Type" type="Hash">8A702F75</value>
  </object>
</object>
<object type="CGameAgent">
  <value name="blsScripted" type="Bool">True</value>
  <value name="fAccelerationsSlow" type="Float">0.75</value>
  <value name="fAccelerationsNormal" type="Float">1</value>
  <value name="fAccelerationsFast" type="Float">1.25</value>
  <value name="fDecelerationsSlow" type="Float">-1</value>
  <value name="fDecelerationsNormal" type="Float">-1.25</value>
  <value name="fDecelerationsFast" type="Float">-1.5</value>
  <value name="fSpeedsBabyStep" type="Float">0.5</value>
  <value name="fSpeedsWalk" type="Float">1</value>
  <value name="fSpeedsJog" type="Float">3</value>
  <value name="fSpeedsRun" type="Float">4</value>
  <value name="fSpeedsSprint" type="Float">5</value>
  <value name="fVariationBabyStep" type="Float">0</value>
  <value name="fVariationWalk" type="Float">0</value>
  <value name="fVariationJog" type="Float">0</value>
  <value name="fVariationRun" type="Float">0</value>
  <value name="fVariationSprint" type="Float">0</value>
</object>
```

We are going to replace these sections with this:

```
<object type="CAgent">
  <value hash="24B313D8" type="String">::MercBrain/MercBrain</value>
  <value name="Brain" type="BinHex">01B6506D</value>
  <value hash="071B548C" type="String">scripts\game\newbrains\mercbrain.ai.rml</value>
  <value name="aiwsBrainWorkspace" type="Hash">1251B9DA</value>
  <object type="PersonalityComponent">
    <value hash="2B928622" type="String">CHumanPersonality</value>
    <value name="Type" type="Hash">8A702F75</value>
  </object>
</object>
<object type="CGameAgent">
  <value name="blsScripted" type="Bool">False</value>
  <value name="fAccelerationsSlow" type="Float">2</value>
  <value name="fAccelerationsNormal" type="Float">3</value>
  <value name="fAccelerationsFast" type="Float">4</value>
  <value name="fDecelerationsSlow" type="Float">-2</value>
  <value name="fDecelerationsNormal" type="Float">-3</value>
  <value name="fDecelerationsFast" type="Float">-3.5</value>
  <value name="fSpeedsBabyStep" type="Float">0.5</value>
  <value name="fSpeedsWalk" type="Float">1</value>
  <value name="fSpeedsJog" type="Float">3</value>
  <value name="fSpeedsRun" type="Float">4</value>
  <value name="fSpeedsSprint" type="Float">5</value>
  <value name="fVariationBabyStep" type="Float">0</value>
```

```
<value name="fVariationWalk" type="Float">0.2</value>
<value name="fVariationJog" type="Float">0</value>
<value name="fVariationRun" type="Float">0</value>
<value name="fVariationSprint" type="Float">0</value>
</object>
```

3. “selArmy”

The value controls if the npc is hostile towards the player. We are going to change this to “2”, it should look like this:

```
<value name="selArmy" type="UInt32">2</value>
```

4. “ShootingSystem”

This section controls the npc’s shooting ai. By default it looks like this:

```
<object type="ShootingSystem">
  <value name="archGroupNumberCurve" type="String">Curves.ShootingSystem.GroupNumber</value>
  <value name="fMissWidth" type="Float">3</value>
  <value name="fMissHeight" type="Float">0.5</value>
  <value name="fTimerToMissTarget" type="Float">0.2</value>
  <value name="fPointBlankDistance" type="Float">3</value>
  <value name="fTimerToPointBlank" type="Float">0.5</value>
  <object type="ShooterStatus">
    <value name="fStandingFactor" type="Float">1</value>
    <value name="fCrouchingFactor" type="Float">1.2</value>
    <value name="fMoveSpeedBabyStepFactor" type="Float">1</value>
    <value name="fMoveSpeedWalkFactor" type="Float">0.95</value>
    <value name="fMoveSpeedJogFactor" type="Float">0.8</value>
    <value name="fMoveSpeedRunFactor" type="Float">0.7</value>
    <value name="fMoveSpeedSprintFactor" type="Float">0.6</value>
    <value name="fDrivingFactor" type="Float">0.1</value>
    <value name="fSwimmingFactor" type="Float">0.1</value>
    <value name="flronsightFactor" type="Float">1</value>
    <value name="uiMaxHitPerSecondFactor" type="UInt32">5</value>
  </object>
  <object type="TargetStatus">
    <value name="fStandingFactor" type="Float">1</value>
    <value name="fCrouchingFactor" type="Float">0.8</value>
    <value name="fMoveSpeedBabyStepFactor" type="Float">1</value>
    <value name="fMoveSpeedWalkFactor" type="Float">0.95</value>
    <value name="fMoveSpeedJogFactor" type="Float">0.8</value>
    <value name="fMoveSpeedRunFactor" type="Float">0.7</value>
    <value name="fMoveSpeedSprintFactor" type="Float">0.6</value>
    <value name="fDrivingFactor" type="Float">0.1</value>
    <value name="fSwimmingFactor" type="Float">0.1</value>
    <value name="flronsightFactor" type="Float">1</value>
    <value name="uiMaxHitPerSecondFactor" type="UInt32">5</value>
  </object>
</object>
```

5. “SensorySystem”

This section controls the npc’s ability to see. By default it looks like this:

```
<object type="SensorySystem">
  <object type="FOVParameters">
    <object type="FOVMultipliers">
      <value name="fPreCombatMultiplier" type="Float">4</value>
      <value name="fCombatMultiplier" type="Float">4</value>
      <value name="fPostCombatMultiplier" type="Float">4</value>
      <value name="fPlayerInVehicleMultiplier" type="Float">2</value>
      <value name="fNightTimeMultiplier" type="Float">0.5</value>
      <value name="fSniperLengthMultiplier" type="Float">6</value>
      <value name="fSniperAngleMultiplier" type="Float">0.15</value>
    </object>
  </object>
```

We are going to change it to this:

```
<object type="SensorySystem">
  <object type="FOVParameters">
    <object type="FOVMultipliers">
      <value name="fPreCombatMultiplier" type="Float">0.75</value>
      <value name="fCombatMultiplier" type="Float">1</value>
      <value name="fPostCombatMultiplier" type="Float">1.25</value>
      <value name="fPlayerInVehicleMultiplier" type="Float">2</value>
      <value name="fNightTimeMultiplier" type="Float">0.5</value>
      <value name="fSniperLengthMultiplier" type="Float">6</value>
      <value name="fSniperAngleMultiplier" type="Float">0.15</value>
    </object>
  </object>
```

6. “CFCXCountersComponentAI”

This section controls who can damage the npc. By default it looks like this:

```
<object type="CFCXCountersComponentAI">
  <value name="hidHasAliasName" type="Bool">False</value>
  <value name="archStimEffectTable" type="String">tables.StimEffectTables.NPCDefault</value>
  <value name="blsInvincibleExceptToPlayer" hash="3DED5A88" type="Bool">True</value> <!-- type="BinHex" value="01" -->
  <value name="blsInvincibleToAI" hash="C729E709" type="Bool">True</value> <!-- type="BinHex" value="01" -->
  <value name="blsInvincibleToPlayer" hash="0E37A34A" type="Bool">True</value> <!-- type="BinHex" value="01" -->
```

You can customise these how you like, the value names are self-explanatory. We are going to replace it with the standard enemy version of this section that looks like this:

```
<object type="CFCXCountersComponentAI">
  <value name="hidHasAliasName" type="Bool">False</value>
  <value name="archStimEffectTable" type="String">tables.StimEffectTables.NPCDefault</value>
  <value name="blsInvincibleExceptToPlayer" hash="3DED5A88" type="Bool">False</value> <!-- type="BinHex" value="01" -->
  <value name="blsInvincibleToAI" hash="C729E709" type="Bool">False</value> <!-- type="BinHex" value="01" -->
  <value name="blsInvincibleToPlayer" hash="0E37A34A" type="Bool">False</value> <!-- type="BinHex" value="01" -->
```

Step 2: Adding the new npcs into the patrols

Decoding required

Combined maps

```
xx_GhostPatrols.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
```

Separate maps

```
Map 1: 10_GhostPatrols.xml < entitylibrary.fcb (\patch_unpack\worlds\world1\generated\)
```

```
Map 2: 10_GhostPatrols.xml < entitylibrary.fcb (\patch_unpack\worlds\world2\generated\)
```

The steps for this are largely the same as adding other enemy types into the patrols, instructions for which can be found [here](#). The only thing that’s different is that you use the “hidName” values you used in “xx_buddies.xml”. In my example above the value would be “buddies.Friendlyfighter_Female”.

Buddies

Each buddy has three entries in “xx_buddies.xml”: their version that will rescue you in the open world and you will meet during missions, their betrayed version encountered at the end of the game and their unarmed version found in the bars.

Their entry titles are:

Buddy	Rescue/Mission version	Betrayed version	Unarmed version
Andre Hyppolite	Buddies.Andre_Hyppolite	Buddies.Andre_Hyppolite.Andre_Hyppolite_Betrayed	Buddies.Andre_Hyppolite_Unarmed
Flora Guillen	Buddies.Flora_Guillen	Buddies.Flora_Guillen.Flora_Guillen_Betrayed	Buddies.Flora_Guillen_Unarmed
Frank Bilders	Buddies.Frank_Bilders	Buddies.Frank_Bilders.Frank_Bilders_Betrayed	Buddies.Frank_Bilders_Unarmed
Hakim Echebbi	Buddies.Hakim_Echebbi	Buddies.Hakim_Echebbi.Hakim_Echebbi_Betrayed	Buddies.Hakim_Echebbi_Unarmed
Josip Idromeno	Buddies.Josip_Idromeno	Buddies.Josip_Idromeno.Josip_Idromeno_Betrayed	Buddies.Josip_Idromeno_Unarmed
Marty Alencar	Buddies.Marty_Alencar	Buddies.Marty_Alencar.Marty_Alencar_Betrayed	Buddies.Marty_Alencar_Unarmed
Michele Dachss	Buddies.Michele_Dachss	Buddies.Michele_Dachss.Michele_Dachss_Betrayed	Buddies.Michele_Dachss_Unarmed
Nasreen Davar	Buddies.Nasreen_Davar	Buddies.Nasreen_Davar.Nasreen_Davar_Betrayed	Buddies.Nasreen_Davar_Unarmed
Paul Ferenc	Buddies.Paul_Ferenc	Buddies.Paul_Ferenc.Paul_Ferenc_Betrayed	Buddies.Paul_Ferenc_Unarmed
Quarbani Singh	Buddies.Quarbani_Singh	Buddies.Quarbani_Singh.Quarbani_Singh_Betrayed	Buddies.Quarbani_Singh_Unarmed
Warren Clyde	Buddies.Warren_Clyde	Buddies.Warren_Clyde.Warren_Clyde_Betrayed	Buddies.Warren_Clyde_Unarmed
Xianyong Bai	Buddies.Xianyong_Bai	Buddies.Xianyong_Bai.Xianyong_Bai_Betrayed	Buddies.Xianyong_Bai_Unarmed

Buddy weapon packs

```
xx_buddies.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
```

Buddies weapon packs are controlled by two stats, “8C965C28” and “packInventoryPack”.

There are two options for this:

8C965C28 - buddy
packInventoryPack - 1EA78759

8C965C28 - buddy_shotgun
packInventoryPack - 46F786B8

This is what weapon packs are by default assigned to each buddy:

Andre Hyppolite - buddy_shotgun
Flora Guillen - buddy
Frank Bilders - buddy_shotgun
Hakim Echebbi - buddy_shotgun
Josip Idromeno - buddy_shotgun
Marty Alencar - buddy
Michele Dachss - buddy
Nasreen Davar - buddy
Paul Ferenc - buddy_shotgun
Quarbani Singh - buddy
Warren Clyde - buddy_shotgun
Xianyong Bai - buddy

```
<object type="Inventory">  
  <value hash="8C965C28" type="String">buddy</value>  
  <value name="packInventoryPack" type="Hash">1EA78759</value>
```

Buddy weapons

gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)

Buddy weapons are controlled within the “<InventoryPacks>” section of this file.

There are different weapon packs here for the different buddy types, these are their titles:

```
<Pack name="buddy">  
<Pack name="buddy_shotgun">
```

Below each of these titles you’ll see lists of weapons. Each buddy has two lists, one each to control their secondary and primary weapons. I have always kept the buddy secondary weapon as default, with only the desert eagle.

Each of these lists is made up of individual weapons and difficulty levels, these are the individual components:

SecondaryWeapon/PrimaryWeapon - These depend on the class of weapon you’re adding. “SecondaryWeapon” is for secondaries and “PrimaryWeapon” is for primaries. You can add special weapons under “PrimaryWeapon” and it will work fine.

difficulty=“xx” - There are 28 difficulty levels (0-27). I don’t know exactly how these apply to gameplay, whether it’s based on geography, infamy level or position in the story. I’ve done a test before by setting levels 26 and 27 to only flamethrowers, driving around the map everyone had regular weapons but once I went into the Heart of Darkness for the final stages of the game everyone had the flamethrowers. I’ve always imagined the transition from map 1 to map 2 happening around difficulty level 14.

probability=“xx” - You can set individual probabilities for each weapon within the difficulty levels. The probabilities for each difficulty level need to add up to 1. You can have as many weapons as you want with different probabilities or a single weapon with a probability of 1.

archetype=“xx” - This is the name for each weapon. You can find these names within the xx_weaponproperties.xml file from entitylibrarypatchoverride.fcb. Don’t forget that weapons that are specials for the player have separate versions for enemies that are primaries. These are normally marked by “_Merc” in the title but for the flamethrower you can use the multiplayer version marked with “_Multi” as that’s already a primary.

This is an example section from Vanilla+:

```
<PrimaryWeapon difficulty="24" probability="0.05" archetype="weapons.Primary.G3KA4" />  
<PrimaryWeapon difficulty="24" probability="0.15" archetype="weapons.Primary.AK47" />  
<PrimaryWeapon difficulty="24" probability="0.33" archetype="weapons.Primary.FNFAL" />  
<PrimaryWeapon difficulty="24" probability="0.31" archetype="weapons.Primary.M16" />  
<PrimaryWeapon difficulty="24" probability="0.05" archetype="weapons.Special.PKM.PKM_Merc" />  
<PrimaryWeapon difficulty="24" probability="0.10" archetype="weapons.Special.M249_Saw.M249_Saw_Merc" />  
<PrimaryWeapon difficulty="24" probability="0.01" archetype="weapons.Primary.AK47.AK47_Gold" />
```

Changing all of this is lots of work and if you make a single mistake in the format of a line your file can stop packing properly and you won’t know where you’ve gone wrong. I suggest planning it all out first. To make this easier I split the difficulties into sections (0-5, 6-10, 11-15, 16-20, 21-25, 26-27) and I made lists of it all in pencil so I could edit it and know what I want before working in the actual file.

AKA	Makarov	40	25	0	0	0	0
Rocket Launcher	Star 45	25	15	10	0	0	0
Mortar	Desert Eagle	0	10	20	30	35	40
	M60	10	15	15	10	0	0
	Uzi	5	15	25	20	15	0
	MPS	5	10	25	40	50	60
	Sawed Off	15	10	5	0	0	0
	M79	0	0	0	0	0	0

Health

Decoding required

xx_buddies.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

Buddy health is controlled by the “fAgentHealth” stat in the “CFCXCountersComponentAIBuddy” section.

```
<object type="CFCXCountersComponentAIBuddy">
  <value name="hidHasAliasName" type="Bool">False</value>
  <value name="archStimEffectTable" type="String">tables.StimEffectTables.NPCDefault</value>
  <value name="blsInvincibleExceptToPlayer" hash="3DED5A88" type="Bool">False</value> <!-- type="BinHex" value="00" -->
  <value name="blsInvincibleToAI" hash="C729E709" type="Bool">False</value> <!-- type="BinHex" value="00" -->
  <value name="blsInvincibleToPlayer" hash="0E37A34A" type="Bool">False</value> <!-- type="BinHex" value="00" -->
  <value name="WeaponJamProbabilityScale" hash="2D6DDF89" type="Float">1.0</value> <!-- type="BinHex" value="0000803F" -->
  <value name="bEnableHitLocations" hash="F0A9E476" type="Bool">True</value> <!-- type="BinHex" value="01" -->
  <value name="fAgentHealth" hash="2B41D37D" type="Float">600.0</value> <!-- type="BinHex" value="00001644" -->
  <value name="fHealthFailureTorsoHitModifier" hash="00C9A8CA" type="Float">0.5</value> <!-- type="BinHex" value="0000003F" -->
  <value name="fHealthFailureLimbsHitModifier" hash="E7A28A51" type="Float">0.2</value> <!-- type="BinHex" value="CDCC4C3E" -->
  <value name="fHealthFailureCantDieDuration" hash="6A478A4A" type="Float">0.4</value> <!-- type="BinHex" value="CDCCCC3E" -->
</object>
```

Invincibility

Decoding required

xx_buddies.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

Buddy invincibility can be controlled using a number of stats in the “CFCXCountersComponentAIBuddy” section. An important detail to remember with them is that explosions are classed as seperate to who caused them, meaning there are three basic sources of damage: enemies, the player, and explosions.

- “blsInvincibleExceptToPlayer” - Buddies are only vulnerable to player damage.
- “blsInvincibleToAI” - Buddies are vulnerable to player damage and explosions.
- “blsInvincibleToPlayer” - Buddies are vulnerable to enemy damage and explosions

You can set these values to either “True” or “False”.

```
<object type="CFCXCountersComponentAIBuddy">
  <value name="hidHasAliasName" type="Bool">False</value>
  <value name="archStimEffectTable" type="String">tables.StimEffectTables.NPCDefault</value>
  <value name="blsInvincibleExceptToPlayer" hash="3DED5A88" type="Bool">False</value> <!-- type="BinHex" value="00" -->
  <value name="blsInvincibleToAI" hash="C729E709" type="Bool">False</value> <!-- type="BinHex" value="00" -->
  <value name="blsInvincibleToPlayer" hash="0E37A34A" type="Bool">False</value> <!-- type="BinHex" value="00" -->
  <value name="WeaponJamProbabilityScale" hash="2D6DDF89" type="Float">1.0</value> <!-- type="BinHex" value="0000803F" -->
  <value name="bEnableHitLocations" hash="F0A9E476" type="Bool">True</value> <!-- type="BinHex" value="01" -->
  <value name="fAgentHealth" hash="2B41D37D" type="Float">600.0</value> <!-- type="BinHex" value="00001644" -->
  <value name="fHealthFailureTorsoHitModifier" hash="00C9A8CA" type="Float">0.5</value> <!-- type="BinHex" value="0000003F" -->
  <value name="fHealthFailureLimbsHitModifier" hash="E7A28A51" type="Float">0.2</value> <!-- type="BinHex" value="CDCC4C3E" -->
  <value name="fHealthFailureCantDieDuration" hash="6A478A4A" type="Float">0.4</value> <!-- type="BinHex" value="CDCCCC3E" -->
</object>
```

Vehicles

Base game vehicles

The stats for the base vehicles are controlled by the file “xx_vehicle.xml” within “entitylibrarypatchoverride.fcb” from \patch_unpack\generated\. Each vehicle variation has a separate entry and I’ve listed all the entry titles below. I’ve tried to include every drivable vehicle that appears in the singleplayer game but I’m not 100% about all the paraglider and big truck entries, maybe I’ve included some that aren’t actually drivable.

Hang glider	Air.ParagliderIntel
	Air.Paraglider
	Air.Paraglider.Paraglider_Lv1
	Air.Paraglider.Paraglider_Lv2
	Air.Paraglider.Paraglider_Lv3
	Air.Paraglider.Paraglider_Lv4
	Air.Paraglider.Paraglider_Lv5
Big truck	Land.BigTruck
	Land.BigTruck.A2LM09_NitrousTruck
	Land.BigTruck.Tanker
	Land.BigTruck_Tanker
Dune buggy	Land.Buggy
Car	Land.Datsun
Jeep Liberty	Land.JeepLiberty
	Land.JeepLiberty.VIP
Jeep Wrangler	Land.JeepWrangler
Assault truck	Land.Rover
	Land.Rover.M249_Mounted
	Land.Rover.M2_Mounted
	Land.Rover.MK19_Mounted
Fishing boat	Sea.FishingBoat
	Sea.FishingBoat.M249_Mounted
	Sea.FishingBoat.M2_Mounted
	Sea.FishingBoat.MK19_Mounted
Swamp boat	Sea.SwampBoat
	Sea.SwampBoat.M249_Mounted
	Sea.SwampBoat.M2_Mounted
	Sea.SwampBoat.MK19_Mounted

DLC vehicles

The stats for the DLC vehicles have the same structure as the base game vehicles, but in a different file. The DLC vehicle file is “2_vehicles.xml” within “entitylibrary.fcb” from \patch_unpack\downloadcontent\dlc1\generated\.

ATV	Land.DLC_Vehicle1_DLC1
Unimog/Utility truck	Land.DLC_Vehicle2_DLC1

Weight

Decoding required

Base game vehicles - xx_vehicle.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

DLC vehicles - 2_vehicle.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Vehicle weight is controlled by the “fMass” stat in the “WheeledParams” section.

You can reduce this to increase vehicle speed and responsiveness. Reducing it too much can break the steering so I recommend only reducing it by a maximum of 15%.

```
<object hash="279B86EC" type="WheeledParams">
  <value name="fMass" hash="3D255EB4" type="Float">1000.0</value> <!-- type="BinHex" value="00007A44" -->
```

Land vehicle speed

Land vehicle speed is controlled with a variety of stats, we can increase the top speed and then the ability to reach that top speed with engine power and gearing stats. I have increased them all by the same proportion previously but you can experiment with it all.

Top speed

Decoding required

Base game vehicles - xx_vehicle.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC vehicles - 2_vehicle.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Land vehicle top speed is controlled by the “fGearBoxTopSpeed” stat in the “WheeledParams” section.

```
<object hash="279B86EC" type="WheeledParams">
  <value name="fMass" hash="3D255EB4" type="Float">1600.0</value> <!-- type="BinHex" value="0000C844" -->
  <value name="fEnginePower" hash="0CF4A9FC" type="Float">95.0</value> <!-- type="BinHex" value="0000BE42" -->
  <value name="fExtraClimbEnginePower" hash="0585E2C2" type="Float">400.0</value> <!-- type="BinHex" value="0000C843" -->
  <value name="fGearBoxTopSpeed" hash="8E3D52A5" type="Float">31.0</value> <!-- type="BinHex" value="0000F841" -->
```

Engine power

Decoding required

Base game vehicles - xx_vehicle.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC vehicles - 2_vehicle.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Land vehicle engine power is controlled by two stats, “fEnginePower” and “fExtraClimbEnginePower” in the “WheeledParams” section.

I don’t know exactly what “fExtraClimbEnginePower” does but I think we can infer it helps climbing hills.

```
<object hash="279B86EC" type="WheeledParams">
  <value name="fMass" hash="3D255EB4" type="Float">1600.0</value> <!-- type="BinHex" value="0000C844" -->
  <value name="fEnginePower" hash="0CF4A9FC" type="Float">95.0</value> <!-- type="BinHex" value="0000BE42" -->
  <value name="fExtraClimbEnginePower" hash="0585E2C2" type="Float">400.0</value> <!-- type="BinHex" value="0000C843" -->
  <value name="fGearBoxTopSpeed" hash="8E3D52A5" type="Float">31.0</value> <!-- type="BinHex" value="0000F841" -->
```

Gearing

Decoding required

Base game vehicles - xx_vehicle.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC vehicles - 2_vehicle.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Land vehicle gearing is controlled by the stats in the “GearEmulation” section. I don’t know exactly how these work but you can increase the stats for better acceleration and to make it easier to reach top speed. Every land vehicle is controlled by three gears, no matter how many are listed elsewhere.

Editing these isn’t too bad but it’s a bit complicated to describe.

The first thing to notice is that each gear overlaps, the max speed of one gear is faster than the minimum speed of the next. Make sure your gears overlap the same when you’re done!

To increase the gearing we’re going to increase the “fMaxSpeed” stat of “Gear0” and both the “fMinSpeed” and “fMaxSpeed” stats of “Gear1” and “Gear2”. I recommend increasing all these stats by the same proportion, unless you actually know what you’re doing with vehicle gears.

```
<object hash="4D76B715" type="GearEmulation">
  <object hash="52CCFEBA" type="Gear0">
    <value name="fMinSpeed" hash="5FFD7A4F" type="Float">0.0</value> <!-- type="BinHex" value="00000000" -->
    <value name="fMaxSpeed" hash="B99DD5AE" type="Float">4.0</value> <!-- type="BinHex" value="00008040" -->
    <value name="fMinRPM" hash="54F9B0B8" type="Float">800.0</value> <!-- type="BinHex" value="00004844" -->
    <value name="fMaxRPM" hash="11FBF33A" type="Float">8000.0</value> <!-- type="BinHex" value="0000FA45" -->
  </object>
  <object hash="25CBCE2C" type="Gear1">
    <value name="fMinSpeed" hash="5FFD7A4F" type="Float">3.8</value> <!-- type="BinHex" value="33337340" -->
    <value name="fMaxSpeed" hash="B99DD5AE" type="Float">9.5</value> <!-- type="BinHex" value="00001841" -->
    <value name="fMinRPM" hash="54F9B0B8" type="Float">2500.0</value> <!-- type="BinHex" value="00401C45" -->
    <value name="fMaxRPM" hash="11FBF33A" type="Float">9000.0</value> <!-- type="BinHex" value="00A00C46" -->
  </object>
  <object hash="BCC29F96" type="Gear2">
    <value name="fMinSpeed" hash="5FFD7A4F" type="Float">9.3000002</value> <!-- type="BinHex" value="CDCC1441" -->
    <value name="fMaxSpeed" hash="B99DD5AE" type="Float">15.0</value> <!-- type="BinHex" value="00007041" -->
    <value name="fMinRPM" hash="54F9B0B8" type="Float">3500.0</value> <!-- type="BinHex" value="00C05A45" -->
    <value name="fMaxRPM" hash="11FBF33A" type="Float">11000.0</value> <!-- type="BinHex" value="00E02B46" -->
  </object>
</object>
```

Boats

Engine power

Decoding required

Base game vehicles - xx_vehicle.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC vehicles - 2_vehicle.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Boat engine power is controlled by two stats, “fForwardEnginePower” and “fReverseEnginePower” in the “BoatParams” section.

```
<value name="fForwardEnginePower" hash="B835E52E" type="Float">3.5</value> <!-- type="BinHex" value="00006040" -->
<value name="fReverseEnginePower" hash="CB275F6D" type="Float">5.0</value> <!-- type="BinHex" value="0000A040" -->
<value name="fEngineBrakingPower" hash="D330AADC" type="Float">4.0</value> <!-- type="BinHex" value="00008040" -->
```

Braking power

Decoding required

Base game vehicles - xx_vehicle.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC vehicles - 2_vehicle.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Boat braking power is controlled by the “fEngineBrakingPower” stat in the “BoatParams” section.

```
<value name="fForwardEnginePower" hash="B835E52E" type="Float">3.5</value> <!-- type="BinHex" value="00006040" -->
<value name="fReverseEnginePower" hash="CB275F6D" type="Float">5.0</value> <!-- type="BinHex" value="0000A040" -->
<value name="fEngineBrakingPower" hash="D330AADC" type="Float">4.0</value> <!-- type="BinHex" value="00008040" -->
```

Collision damage

Decoding required

Base game vehicles - xx_vehicle.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC vehicles - 2_vehicle.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Collision damage is controlled by the “nMaxStimCollisionLevel” stat in the “CVehicleWheeledPhysComponent” section. This isn’t a direct modifier for collision damage, it controls the maximum damage that can be received from a single collision.

This must be a whole number, any value with a decimal point (e.g. 20.5) will stop the files from repacking.

```
<object type="CVehicleWheeledPhysComponent">
  <value name="hidHasAliasName" type="Bool">False</value>
  <value hash="527E7674" type="String">graphics\vehicles\land\bigtruck_tanker\bigtruck_tanker.hkx</value>
  <value name="hidResourceId" type="Hash">3416FF86</value>
  <value name="hidNewCollision" hash="65D43FE4" type="Bool">True</value> <!-- type="BinHex" value="01" -->
  <value name="sndtpSoundType" hash="8FE662AD" type="Int32">13</value> <!-- type="BinHex" value="0D000000" -->
  <value name="nMaxStimCollisionLevel" hash="EFD4B11F" type="UInt32">20</value> <!-- type="BinHex" value="1C000000" -->
```

Max look angle

Base game vehicles - xx_vehicle.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
DLC vehicles - 2_vehicle.xml < entitylibrary.fcb (\patch_unpack\downloadcontent\dlc1\generated\)

Max look angle is controlled by the “vehicleMaxLookAngle” stat in the “CVehicle” section.

Horizontal max look angle is controlled by the z axis stat. All the vehicles have identical values except the swamp boats which have their max look angle reduced.

```
<value name="vehicleMaxLookAngle" hash="58992FEC" type="Vector3">
  <x>30.0</x>
  <y>0.0</y>
  <z>169.9999847</z>
</value> <!-- type="BinHex" value="0000F04100000000FFFF2943" -->
```

Upgrades

Vehicle upgrades are controlled by the “gamemodesconfig.xml” file from \patch_unpack\engine\gamemodes\.

Editing the upgrades is the only way to increase a vehicle’s health and repair speed.

Each upgrade has two identifying values, a name and object. These are all of them that are used in the singleplayer game:

Vehicle	Upgrade Name	Upgrade object
Assault truck	rover_vehicle_manual	rover
Dune buggy	buggy_vehicle_manual	buggy
Swamp boat	swampboat_vehicle_manual	swampboat
Fishing boat	fishingboat_vehicle_manual	fishingboat
Jeep Liberty	jeep_liberty_vehicle_manual	jeep_liberty
Jeep Wrangler	jeep_wrangler_vehicle_manual	jeep_wrangler
Big truck	bigtruck_vehicle_manual	bigtruck
Car	datsum_vehicle_manual	datsum

Health

gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)

It is possible to increase a vehicle’s health by increasing the “degradation” stat of its upgrade. This stat works as a percentage reduction of all damage.

```
<Plan name="rover_vehicle_manual" object="rover">
    <bonus attr="degradation" value="-50" type="percent"/>
    <bonus attr="repairtime" value="-50" type="percent"/>
</Plan>
```

Repair speed

gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)

Vehicle repair speed is controlled by the “repairtime” stat of its upgrade.This stat works as a percentage reduction of the base repair time.

```
<Plan name="rover_vehicle_manual" object="rover">
    <bonus attr="degradation" value="-50" type="percent"/>
    <bonus attr="repairtime" value="-50" type="percent"/>
</Plan>
```

Bug fix - Hang gliders falling out of the sky when shot

Decoding required

xx_vehicle.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

In the vanilla game the hang glider has a bad tendency to fall immediately out of the sky or get pushed into doing loop-de-loops when shot. We’re going to fix that so you will still feel getting shot but only fall out of the sky under very heavy fire.

To do this we’re going to increase the hang glider’s weight with the “fMass” stat in the “ParagliderParams” section.

I’ve done a lot of testing and the best value I found for this is “2420”. Much heavier and getting shot makes no difference, much lighter and the problem isn’t fixed.

The same change can be applied to all of the different singleplayer hang glider entries:

Air.ParagliderIntel
Air.Paraglider
Air.Paraglider.Paraglider_Lv1
Air.Paraglider.Paraglider_Lv2
Air.Paraglider.Paraglider_Lv3
Air.Paraglider.Paraglider_Lv4
Air.Paraglider.Paraglider_Lv5

```
<object hash="F766D2D8" type="ParagliderParams">
    <value name="fMass" hash="3D255EB4" type="Float">300.0</value> <!-- type="BinHex" value="00009643" -->
```

Bug fix - Hang gliders bouncing on water

Decoding required

xx_vehicle.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

In the vanilla game the hang glider bounces on water like a cat that doesn’t want to get wet. We’re going to fix that so it is buoyant and will settle on the water surface. You can even climb onto it!

The same changes can be applied to all of the different singleplayer hang glider entries:

Air.ParagliderIntel
Air.Paraglider
Air.Paraglider.Paraglider_Lv1
Air.Paraglider.Paraglider_Lv2
Air.Paraglider.Paraglider_Lv3
Air.Paraglider.Paraglider_Lv4
Air.Paraglider.Paraglider_Lv5

Step 1: Increase discarded weight

The hang glider’s weight once discarded is controlled by the “fDiscardedMass” stat in the “CVehicleParagliderPhysComponent” section.

I’ve done a lot of testing and the best value I found for this is “825”. This had a good balance of being buoyant while reacting somewhat realistically to hitting the water and the player standing on it.

```
<value name="fDiscardedMass" hash="331194A1" type="Float">75.0</value> <!-- type="BinHex" value="00009642" -->
```

Step 2: Increase maximum depth in water

The hang glider’s maximum depth in water is controlled by the “fUnderWaterMaxDepth” stat in the “CVehicle” section.

I recommend changing this to “1.5”.

```
<value name="fUnderWaterMaxDepth" hash="1C83382E" type="Float">-1.0</value> <!-- type="BinHex" value="000080BF" -->
```

Bug fix - Seeing the edges of the players arms when using hang gliders

Decoding required

```
xx_vehicle.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
```

With the default fov in hang gliders, you can see the edges of the player’s arms because they don’t actually connect to the body.

Fov is controlled by the “fFOVAngle” stat in the “FOV” section.

The default value is 90, with a value of 81 you can no longer see the arm edges.

The same changes can be applied to all of the different singleplayer hang glider entries:

Air.ParagliderIntel
Air.Paraglider
Air.Paraglider.Paraglider_Lv1
Air.Paraglider.Paraglider_Lv2
Air.Paraglider.Paraglider_Lv3
Air.Paraglider.Paraglider_Lv4
Air.Paraglider.Paraglider_Lv5

```
<object hash="7EBF8F6B" type="FOV">
    <value name="archFOVCurveName" hash="7444EF78" type="String"></value> <!-- type="BinHex" value="00" -->
    <value name="fFOVAngle" hash="49745480" type="Float">81.0</value> <!-- type="BinHex" value="0000B442" -->
    <value name="fFOVTransitionTime" hash="C7BBDB88" type="Float">0.2</value> <!-- type="BinHex" value="CDCC4C3E" -->
</object>
```

Bug fix - Silent big truck engine

Decoding required

```
xx_vehicle.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
```

In the vanilla game the big truck barely makes any engine noise. We’re going to make this louder.

There are a number of big truck entries that need this fix applied to and we may as well apply it to all of them, including those that aren’t drivable by the player. This is the list of entries:

Land.BigTruck
Land.BigTruck.A2LM09_NitrousTruck
Land.BigTruck.ScriptedBigTruck
Land.BigTruck.Tanker
Land.BigTruck_Tanker

The fix is going to involve editing the sound values in the “Sound” section for each big truck entry. This is the list of changes, with a completed section beneath that you can copy and paste into your file:

sndPlayEngineIdleLoop - 0x0045CD73 → 0x004EE930
sndStopEngineIdleLoop - 0x0045CD7A → 0x004EE933
sndEngineLoop - 0x0045CD74 → 0x004EE931
sndEngineIgnition - 0x0045CD79 → 0x004EE932
sndTurnOffEngine - 0x0045CD7A → 0x004EE933
sndFrameLoop - 0x004B8893 → 0x004EE940
sndThrustPedal - 0x0045CD71 → 0x004EE92F

```
<object type="Sound">
  <value name="sndPlayEngineIdleLoop" hash="EB7BAA7B" type="String">0x004EE930</value> <!-- type="BinHex" value="3078303034454539333000" -->
  <value name="sndStopEngineIdleLoop" hash="A64C403E" type="String">0x004EE933</value> <!-- type="BinHex" value="3078303034454539333300" -->
  <value name="sndEngineLoop" hash="4213C1F9" type="String">0x004EE931</value> <!-- type="BinHex" value="3078303034454539333100" -->
  <value name="sndExtraTorqueEngineLoop" hash="BAF04771" type="String">0xFFFFFFFF</value> <!-- type="BinHex" value="3078464646464646464600" -->
  <value name="sndEngineIgnition" hash="85ED816E" type="String">0x004EE932</value> <!-- type="BinHex" value="3078303034454539333200" -->
  <value name="sndTurnOffEngine" hash="9D9CC7C5" type="String">0x004EE933</value> <!-- type="BinHex" value="3078303034454539333300" -->
  <value name="sndFrameLoop" hash="5902AE1B" type="String">0x004EE940</value> <!-- type="BinHex" value="3078303034454539343000" -->
  <value name="sndGearShift_New" hash="8841202C" type="String">0xFFFFFFFF</value> <!-- type="BinHex" value="3078464646464646464600" -->
  <value name="sndGearShift_MinorDamage" hash="17F3423F" type="String">0xFFFFFFFF</value> <!-- type="BinHex" value="3078464646464646464600" -->
  <value name="sndGearShift_MajorDamage" hash="59C853C7" type="String">0xFFFFFFFF</value> <!-- type="BinHex" value="3078464646464646464600" -->
  <value name="sndThrustPedal" hash="A6A2A9B7" type="String">0x004EE92F</value> <!-- type="BinHex" value="3078303034454539324600" -->
```

Guide - DLC vehicle colour variety

By default in singleplayer the ATV is always blue and the Utility truck/Unimog is always grey. The multiplayer versions of these vehicles have a variety of colours, so this guide will cover transferring those colours to the singleplayer vehicles.

Step 1: Find the multiplayer DLC vehicle colour files

Go to your Far Cry 2 folder and copy “entitylibrary.fat/.dat” from \Far Cry 2\Data_Win32\downloadcontent\dlc1\.

Paste these files alongside your modding tools and unpack them.

There are three files you need to take from \entitylibrary_unpack\graphics_materials\:

sdore2-m-2008101549108296.xbm (Utility truck/Unimog file 1)
sdore2-m-2008101549131546.xbm (Utility truck/Unimog file 2)
sdore2-m-2008101652084625.xbm (ATV)

Copy and paste these files into your patch at \patch_unpack\graphics_materials\.

Step 2: Renaming the files

Rename the files to the following:

sdore2-m-2008101549108296.xbm → sdore2-m-2008081267040340.xbm

sdore2-m-2008101549131546.xbm → sdore2-m-2008081958233898.xbm

sdore2-m-2008101652084625.xbm → sdore2-m-2008100649183233.xbm

Guide - DLC vehicle upgrades

It is possible to add new vehicles upgrades for the ATV and unimog. The new upgrades work as intended except the repair animations don’t speed up like with the regular repair upgrades. The repair time still upgrades correctly though, so it’s only a visual difference. Adding the upgrades to the weapon shop also means replacing two existing ones, as we can’t add new entries. You can replace any of them but this guide will cover replacing the big truck and fishing boat upgrades, because these are the least used vehicles.

Step 1: Creating new upgrades

gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)

To create new upgrades we are going to redirect the big truck and fishing boat upgrades to the unimog and ATV. To do this we are going to replace the “object” values for the existing upgrades. The big truck object will be “unimog” and the fishing boat object will be “quad”. Your completed sections should look like this:

```
<Plan name="bigtruck_vehicle_manual" object="unimog">
  <bonus attr="degradation" value="-50" type="percent"/>
  <bonus attr="repairtime" value="-50" type="percent"/>
</Plan>

<Plan name="fishingboat_vehicle_manual" object="quad">
  <bonus attr="degradation" value="-50" type="percent"/>
  <bonus attr="repairtime" value="-50" type="percent"/>
</Plan>
```

Step 2: Changing the upgrade names
\patch_pack\languages\ - Each language has its own folder and “oasisstrings.rml” file.

We are going to change the names of the big truck and fishing boat upgrades to match their new targets.

The entries are for “bigtruck” and “fishingboat” within the “Items” section. My completed section looks like this, and you can translate for each other language file:

```
<string enum="fishingboat" value="ATV" />
<string enum="bigtruck" value="Utility Truck" />
```

Guide - Look back key

Looking back is already possible by pressing both mouse buttons but we can also create an equivalent function on a single, rebindable keyboard button.

Step 1: Create a new look back function
inputactionmapcommon.xml (\patch_unpack\config\)

We are going to recreate the existing look back function but create it with a new binding.

Copy the section below into the “common_in_vehicle” section:

```
<CompoundInput name="look_pov" device="kb">
    <Binding input="v" axis="1" invert="1"/>
    <Binding input="" axis="1"/>
</CompoundInput>
<Binding input="kb:look_pov" action="press" signal="look_pov"/>
<Binding input="kb:look_pov" action="release" signal="look_pov"/>
```

(Optional) Step 2: Make the new binding rebindable

Adding the key binding to the default controls list
defaultusercontrols.xml (\patch_unpack\config\)

To add the new key binding to the “Vehicles” in-game controls menu add the following line to the “CATEGORY_VEHICLES” section:

```
<Control name="lookback" key1="kb:v" actionmap="common_lookback_remap" group="2" conflictmask="12"/>
```

The completed section should look like this:

```
<Category name="CATEGORY_VEHICLES">
    <Control name="accelerator" key1="kb:w" key2="kb:up" actionmap="common_driving_remap" group="2" conflictmask="12"/>
    <Control name="reverse" key1="kb:s" key2="kb:down" actionmap="common_driving_remap" group="2" conflictmask="12"/>
    <Control name="steerleft" key1="kb:a" key2="kb:left" actionmap="common_driving_remap" group="2" conflictmask="12"/>
    <Control name="steerright" key1="kb:d" key2="kb:right" actionmap="common_driving_remap" group="2" conflictmask="12"/>
    <Control name="lookback" key1="kb:v" actionmap="common_lookback_remap" group="2" conflictmask="12"/>
    <Control name="toggle_headlights" key1="kb:g" actionmap="common_driving_remap" group="2" conflictmask="12"/>
    <Control name="hand_brake" key1="kb:space" actionmap="common_driving_remap" group="2" conflictmask="12"/>
    <Control name="change_seat" key1="kb:c" actionmap="common_changeseat_remap" group="2" conflictmask="12"/>
    <Control name="exitvehicle" key1="kb:e" actionmap="common_exitvehicle_remap" group="2" conflictmask="12"/>
</Category>
```

Link the changes to the default controls to the controls system
Inputactionmapcommon.xml (\patch_unpack\config\)

To link our changes to the controls system add the following line below the “common_in_vehicle” title:

```
<Import actionmap="common_lookback_remap" optional=""/>
```

The completed section should look like this:

```
<ActionMap name="common_in_vehicle">
<Import actionmap="common_in_vehicle_remap" optional=""/>
<import actionmap="common_heal_remap" optional=""/>
<Import actionmap="common_changeseat_remap" optional=""/>
<Import actionmap="common_exitvehicle_remap" optional=""/>
<Import actionmap="common_lookback_remap" optional=""/>
```

Add a new control label
\patch_pack\languages\ - Each language has its own folder and “oasisstrings.rml” file.

Find the section with the title “<section name="Actions">”.

Add the following line into this section, with the correct words for your language in the “value” section:

```
<string enum="lookback" value="Look Back" />
```

Guide - Throwing grenades while driving

This guide will cover how to enable the use of grenades while driving. This is a buggy feature. The animation when throwing a grenade isn’t smooth and snaps the players view back and forward in a janky motion. The grenades also can’t break the windshield, so regular grenades will bounce back into the car and molotovs will immediately ignite unless the glass is broken. This will also happen if you hit the frame of the car.

Step 1: Creating new grenade throwing entries

weapons.gosm.xml (\patch_unpack\scripts\engine\objects\pawn\statemachine\)

We are going to copy and paste two sections of this file, with these titles:

```
<State FullName="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Lowering arms" Type="CGOStateAnim">
```

```
<State FullName="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Throwing grenade" Type="CGOStateEquipment">
```

These sections are next to each other, copy both of them and paste them directly below.

We are now going to rename both of these new sections so these are their titles:

```
<State FullName="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Driver Lowering arms" Type="CGOStateAnim">
```

```
<State FullName="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Driver Throwing grenade" Type="CGOStateEquipment">
```

Now we are going to change the “Connection Target” values of both sections.

The connection target of “Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Driver Lowering arms” is going to be “Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Driver Throwing grenade”.

The connection target of “Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Driver Throwing grenade” is going to be “Vehicles/Vehicles/States/Driving”.

We are also going to change the “abort” Connection Target value of “Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Driver Throwing grenade” to “Vehicles/Vehicles/States/Driving”.

Your complete sections should look like this:

```
<State FullName="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Driver Lowering arms" Type="CGOStateAnim">
  <Parameter Name="groups" />
  <Parameter Name="duration" Value="0" />
  <Parameter Name="signalpriorities" />
  <Parameter Name="forceAnim" Value="0" />
  <Parameter Name="syncAnimDuration" Value="0" />
  <Parameter Name="animStatelD" Value="0" />
  <Parameter Name="layerStatelD" Value="Pawn_Generic_Holster" />
  <Parameter Name="gestureStatelD" Value="0" />
  <Parameter Name="followTerrain" Value="0" />
  <Parameter Name="MoveLayer" Value="-1" />
  <Connection Target="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Driver Throwing grenade" />
  <Event Name="Select grenade" Type="CGOStateEventInventory" Start="100" End="100">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="1" />
    <Parameter Name="triggeredOnEnd" Value="0" />
    <Parameter Name="triggeredOnBegin" Value="0" />
    <Parameter Name="requestType" Value="14" />
    <Parameter Name="simpleEventID" Value="" />
  </Event>
  <Event Name="Backup" Type="CGOStateEventInventory" Start="95" End="95">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="1" />
    <Parameter Name="triggeredOnEnd" Value="0" />
    <Parameter Name="triggeredOnBegin" Value="0" />
    <Parameter Name="requestType" Value="16" />
    <Parameter Name="simpleEventID" Value="" />
  </Event>
  <Event Name="Net Throw event" Type="CGOStateEventPawn" Start="0" End="1">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="0" />
    <Parameter Name="triggeredOnEnd" Value="0" />
    <Parameter Name="triggeredOnBegin" Value="0" />
    <Parameter Name="requestType" Value="12" />
    <Parameter Name="simpleEventID" Value="event_net_throw_grenade" />
  </Event>
```

```
</State>
<State FullName="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Driver Throwing grenade" Type="CGOStateEquipment">
  <Parameter Name="groups" />
  <Parameter Name="duration" Value="0" />
  <Parameter Name="signalpriorities" />
  <Parameter Name="forceAnim" Value="0" />
  <Parameter Name="syncAnimDuration" Value="0" />
  <Parameter Name="animStatelD" Value="0" />
  <Parameter Name="layerStatelD" Value="Pawn_Generic_Throw_Layered" />
  <Parameter Name="gestureStatelD" Value="0" />
  <Parameter Name="followTerrain" Value="0" />
  <Parameter Name="MoveLayer" Value="-1" />
  <Parameter Name="autosetDuration" Value="0" />
  <Parameter Name="syncWith" Value="0" />
  <Connection Target="::Vehicles/Vehicles/States/Driving" />
  <Event Name="Throw" Type="CGOStateEventPawn" Start="25" End="25">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="1" />
    <Parameter Name="triggeredOnEnd" Value="0" />
    <Parameter Name="triggeredOnBegin" Value="0" />
    <Parameter Name="requestType" Value="11" />
    <Parameter Name="simpleEventID" Value="" />
  </Event>
  <Sink Name="abort" Start="0" End="100">
    <Connection Target="::Vehicles/Vehicles/States/Driving" Signal="abort" />
  </Sink>
</State>
```

Step 2: Editing the driving state

vehicles.gosm.xml (\patch_unpack\scripts\engine\objects\pawn\statemachine\)

Find the driving state with this title: <State FullName="::Vehicles/Vehicles/States/Driving" Type="CGOStateAnim">

We are going to add the following section to the bottom of the driving state:

```
<Sink Name="Throw grenade - Driving" Start="0" End="100">
  <Connection Target="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Driver Lowering arms" Signal="driver_throw_grenade" />
</Sink>
```

Your completed section should look like this:

```
<State FullName="::Vehicles/Vehicles/States/Driving" Type="CGOStateAnim">
  <Parameter Name="groups" />
  <Parameter Name="duration" Value="0" />
  <Parameter Name="signalpriorities" />
  <Parameter Name="forceAnim" Value="1" />
  <Parameter Name="syncAnimDuration" Value="0" />
  <Parameter Name="animStatelD" Value="Pawn_Generic_DrivingVehicule" />
  <Parameter Name="layerStatelD" Value="0" />
  <Parameter Name="gestureStatelD" Value="0" />
  <Parameter Name="followTerrain" Value="0" />
  <Parameter Name="MoveLayer" Value="-1" />
  <Event Name="toggle gadget" Type="CGOStateEventInventory" Start="0" End="100" Signal="toggle_gadget">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="0" />
    <Parameter Name="triggeredOnEnd" Value="0" />
    <Parameter Name="triggeredOnBegin" Value="0" />
    <Parameter Name="requestType" Value="32" />
    <Parameter Name="simpleEventID" Value="" />
  </Event>
  <Event Name="try heal" Type="CGOStateEventHeal" Start="0" End="100" Signal="heal">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="0" />
    <Parameter Name="triggeredOnEnd" Value="0" />
    <Parameter Name="triggeredOnBegin" Value="0" />
    <Parameter Name="requestType" Value="0" />
  </Event>
  <Sink Name="Throw grenade - player" Start="0" End="100">
    <Connection Target="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Driver Lowering arms" Signal="driver_throw_grenade" />
  </Sink>
  <Sink Name="Use Gadget" Start="0" End="100">
    <Connection Target="::Vehicles/Vehicles/States/DrawGadget" Signal="switch" />
  </Sink>
  <Sink Name="heal" Start="0" End="100">
    <Connection Target="::Vehicles/Vehicles/States/SyringeDriving" Signal="apply_syringe" />
  </Sink>
  <Sink Name="take pill" Start="0" End="100">
    <Connection Target="::Vehicles/Vehicles/States/PillDriving" Signal="take_malaria_pill" />
  </Sink>
</State>
```

Step 3: Adding the new grenade throwing entries into the vehicle systems

vehicles.gosm.xml (\patch_unpack\scripts\engine\objects\pawn\statemachine\)

We are now going to link our new grenade throwing entries into various vehicle systems that allow them to work.

This involves copying the following lines into various lists in this file:

```
<StateRef Path="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Driver Lowering arms" />
<StateRef Path="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Driver Throwing grenade" />
```

These lists have the following titles, you’ll see that there are already lists there. You simply need to copy the lines above into them:

```
<Group FullName="::Vehicles/Vehicles/AttachedToVehicle" Type="BaseGroup">
<Group FullName="::Vehicles/Vehicles/VehicleBackups" Type="BaseGroup">
<Group FullName="::Vehicles/Vehicles/SittingGroup" Type="BaseGroup">
<Group FullName="::Vehicles/Vehicles/VehicleNoNearZ" Type="BaseGroup">
<Group FullName="::Vehicles/Vehicles/DriverActionMap" Type="BaseGroup">
```

For example, here is one of the lists with the new lines added:

```
<Group FullName="::Vehicles/Vehicles/DriverActionMap" Type="BaseGroup">
  <StateRef Path="::Vehicles/Vehicles/States/Driving" />
  <StateRef Path="::Vehicles/Vehicles/States/DrawGadget" />
  <StateRef Path="::Vehicles/Vehicles/States/UseGadget" />
  <StateRef Path="::Vehicles/Vehicles/States/PillDriving" />
  <StateRef Path="::Vehicles/Vehicles/States/HolsterSwitchGadget" />
  <StateRef Path="::Vehicles/Vehicles/States/SyringeDriving" />
  <StateRef Path="::Vehicles/Vehicles/States/FlipMapVehicle" />
  <StateRef Path="::Vehicles/Vehicles/States/HolsterGadget" />
  <StateRef Path="::Vehicles/Vehicles/States/HolsterGadgetSyringe" />
  <StateRef Path="::Vehicles/Vehicles/States/HolsterGadgetPill" />
  <StateRef Path="::Vehicles/Vehicles/States/HolsterGadgetExitVehicle" />
  <StateRef Path="::Vehicles/Vehicles/States/HoslterGadgetChangeSeat" />
  <StateRef Path="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Driver Lowering arms" />
  <StateRef Path="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Driver Throwing grenade" />
```

Step 4: Adding new controls

inputactionmapcommon.xml (\patch_unpack\config\)

Find the section of this file with the title: <ActionMap name="common_driving">

Copy and paste the following lines into this section, this includes a button to throw a grenade and also swap grenade type:

```
<Binding input="kb:q" action="press" signal="driver_throw_grenade"/>
<Binding input="kb:f" action="press" signal="select_next_throw_gadget"/>
<Binding input="pad:right_shoulder" action="press" signal="driver_throw_grenade"/>
<Binding input="pad:left" action="press" signal="select_next_throw_gadget"/>
```

These changes also require another modification to the controller preset, the headlights need to be moved, I suggest to up on the dpad:

To do this find this line:

```
<Binding input="pad:right_shoulder" action="press" signal="toggle_headlights"/>
```

And change it to this:

```
<Binding input="pad:up" action="press" signal="toggle_headlights"/>
```

Also find the section with the title: <ActionMap name="common_passenger">

Copy and paste the following lines into this section:

```
<Binding input="kb:q" action="press" signal="driver_throw_grenade"/>
<Binding input="kb:f" action="press" signal="select_next_throw_gadget"/>
<Binding input="pad:right_shoulder" action="press" signal="driver_throw_grenade"/>
<Binding input="pad:left" action="press" signal="select_next_throw_gadget"/>
```

You can also add grenade throwing when using a hand glider. It’s pretty buggy as your view is snapped to looking straight down when throwing a grenade, but to do so find the section this this title:

```
<ActionMap name="common_paragliderdriving">
```

Add these lines:

```
<Binding input="kb:f" action="press" signal="select_next_throw_gadget"/>
<Binding input="kb:q" action="press" signal="driver_throw_grenade"/>
```

```
<Binding input="pad:left" action="press" signal="select_next_throw_gadget"/>
<Binding input="pad:right_shoulder" action="press" signal="driver_throw_grenade"/>
```

Step 5: Make the new controls rebindable

inputactionmapcommon.xml (\patch_unpack\config\)

Controls being rebindable is controlled by the “import actionmap” lines directly below the titles of each section of this file.

As we haven’t added any brand new controls we just need the following line into the “import actionmap” sections of the driver and passenger controls sections:

```
<import actionmap="common_grenade_remap" optional=""/>
```

For example, your completed passenger section should look like this:

```
<ActionMap name="common_passenger">
    <import actionmap="common_heal_remap" optional=""/>
    <Import actionmap="common_shoot_remap" optional=""/>
    <Import actionmap="common_iron_remap" optional=""/>
    <Import actionmap="common_reload_remap" optional=""/>
    <Import actionmap="common_changeseat_remap" optional=""/>
    <Import actionmap="common_exitvehicle_remap" optional=""/>
    <bimport actionmap="common_grenade_remap" optional=""/>
```

Guide - Using weapons while driving

This guide will cover how to enable using secondary weapons while driving. This is a buggy feature. The animations don’t line up properly so there is a good amount of the player view jolting around or snapping forward, particularly in boats. The player’s arm also shows some pretty weird behaviour, especially the left arm while shooting and using any weapon that uses two arms.

Making this work is going to involve converting the passenger state to a new state where we can shoot weapons, so here we go.

Step 1: Editing the driver state

vehicles.gosm.xml (\patch_unpack\scripts\engine\objects\pawn\statemachine\)

The driver state has this title:

```
<State FullName="::Vehicles/Vehicles/States/Driving" Type="CGOStateAnim">
```

We are going to add the following to this section, which will make it so you can draw your weapon by shooting or selecting your secondary:

```
<Event Name="Draw Weapon" Type="CGOStateEventInventory" Start="0" End="100" Signal="select_secondary_weapon">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="0" />
    <Parameter Name="triggeredOnEnd" Value="0" />
    <Parameter Name="triggeredOnBegin" Value="0" />
    <Parameter Name="requestType" Value="11" />
    <Parameter Name="simpleEventID" Value="" />
</Event>
<Sink Name="Draw Weapon" Start="0" End="100">
    <Connection Target="::Vehicles/Vehicles/States/PassengerDrawWeapon" Signal="select_secondary_weapon" />
</Sink>
<Sink Name="Draw Weapon" Start="0" End="100">
    <Connection Target="::Vehicles/Vehicles/States/PassengerDrawWeapon" Signal="startshooting" />
</Sink>
```

Your finished section should look like this:

```
<State FullName="::Vehicles/Vehicles/States/Driving" Type="CGOStateAnim">
    <Parameter Name="groups" />
    <Parameter Name="duration" Value="0" />
    <Parameter Name="signalpriorities" />
    <Parameter Name="forceAnim" Value="1" />
    <Parameter Name="syncAnimDuration" Value="0" />
    <Parameter Name="animStatelD" Value="Pawn_Generic_DrivingVehicule" />
    <Parameter Name="layerStatelD" Value="0" />
    <Parameter Name="gestureStatelD" Value="0" />
    <Parameter Name="followTerrain" Value="0" />
    <Parameter Name="MoveLayer" Value="-1" />
    <Event Name="toggle gadget" Type="CGOStateEventInventory" Start="0" End="100" Signal="toggle_gadget">
        <Parameter Name="alwaysTrigger" Value="0" />
        <Parameter Name="triggerOnce" Value="0" />
        <Parameter Name="triggeredOnEnd" Value="0" />
        <Parameter Name="triggeredOnBegin" Value="0" />
        <Parameter Name="requestType" Value="32" />
        <Parameter Name="simpleEventID" Value="" />
    </Event>
```

```
<Event Name="try heal" Type="CGOStateEventHeal" Start="0" End="100" Signal="heal">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="0" />
    <Parameter Name="triggeredOnEnd" Value="0" />
    <Parameter Name="triggeredOnBegin" Value="0" />
    <Parameter Name="requestType" Value="0" />
</Event>
<Event Name="Draw Weapon" Type="CGOStateEventInventory" Start="0" End="100" Signal="select_secondary_weapon">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="0" />
    <Parameter Name="triggeredOnEnd" Value="0" />
    <Parameter Name="triggeredOnBegin" Value="0" />
    <Parameter Name="requestType" Value="11" />
    <Parameter Name="simpleEventID" Value="" />
</Event>
<Sink Name="Draw Weapon" Start="0" End="100">
    <Connection Target="::Vehicles/Vehicles/States/PassengerDrawWeapon" Signal="select_secondary_weapon" />
</Sink>
<Sink Name="Draw Weapon" Start="0" End="100">
    <Connection Target="::Vehicles/Vehicles/States/PassengerDrawWeapon" Signal="startshooting" />
</Sink>
<Sink Name="Use Gadget" Start="0" End="100">
    <Connection Target="::Vehicles/Vehicles/States/DrawGadget" Signal="switch" />
</Sink>
<Sink Name="heal" Start="0" End="100">
    <Connection Target="::Vehicles/Vehicles/States/SyringeDriving" Signal="apply_syringe" />
</Sink>
<Sink Name="take pill" Start="0" End="100">
    <Connection Target="::Vehicles/Vehicles/States/PillDriving" Signal="take_malaria_pill" />
</Sink>
</State>
```

Step 2: Editing the passenger state

vehicles.gosm.xml (\patch_unpack\scripts\engine\objects\pawn\statemachine\)

The passenger state has this title:

```
<State FullName="::Vehicles/Vehicles/States/Passenger" Type="CGOStateAnim">
```

There are lots of changes required here, not only editing the passenger state itself but also adding extra scripts so you can holster your weapon and redraw it automatically when healing. Also included is a line that will allow this state to throw grenades, as long as you have followed the steps in that guide. It’s easiest if you select the entire passenger state section and paste the following over it:

```
<State FullName="::Vehicles/Vehicles/States/Passenger" Type="CGOStateAnim">
    <Parameter Name="groups" />
    <Parameter Name="duration" Value="0" />
    <Parameter Name="signalpriorities" />
    <Parameter Name="forceAnim" Value="1" />
    <Parameter Name="syncAnimDuration" Value="0" />
    <Parameter Name="animStateID" Value="Pawn_Generic_DrivingVehicule" />
    <Parameter Name="layerStateID" Value="0" />
    <Parameter Name="gestureStateID" Value="0" />
    <Parameter Name="followTerrain" Value="0" />
    <Parameter Name="MoveLayer" Value="-1" />
    <Event Name="vehicle beautifier" Type="CGOStateEventBeautifier" Start="0" End="100">
        <Parameter Name="alwaysTrigger" Value="0" />
        <Parameter Name="triggerOnce" Value="1" />
        <Parameter Name="triggeredOnEnd" Value="0" />
        <Parameter Name="triggeredOnBegin" Value="0" />
        <Parameter Name="action" Value="1" />
        <Parameter Name="context" Value="vehiclepassenger" />
    </Event>
    <Event Name="try heal" Type="CGOStateEventHeal" Start="0" End="100" Signal="heal">
        <Parameter Name="alwaysTrigger" Value="0" />
        <Parameter Name="triggerOnce" Value="0" />
        <Parameter Name="triggeredOnEnd" Value="0" />
        <Parameter Name="triggeredOnBegin" Value="0" />
        <Parameter Name="requestType" Value="0" />
    </Event>
    <Event Name="Try Auto Draw" Type="CGOStateEventInventory" Start="0" End="1">
        <Parameter Name="alwaysTrigger" Value="0" />
        <Parameter Name="triggerOnce" Value="1" />
        <Parameter Name="triggeredOnEnd" Value="0" />
        <Parameter Name="triggeredOnBegin" Value="1" />
        <Parameter Name="requestType" Value="38" />
        <Parameter Name="simpleEventID" Value="" />
    </Event>
    <Event Name="Try Start Shooting" Type="CGOStateEventEquipment" Start="0" End="100" Signal="startshooting">
        <Parameter Name="alwaysTrigger" Value="0" />
        <Parameter Name="triggerOnce" Value="0" />
        <Parameter Name="triggeredOnEnd" Value="0" />
        <Parameter Name="triggeredOnBegin" Value="0" />
        <Parameter Name="requestType" Value="3" />
    </Event>
    <Event Name="Pull Trigger" Type="CGOStateEventPawn" Start="0" End="100" Signal="pull_trigger">
        <Parameter Name="alwaysTrigger" Value="0" />
        <Parameter Name="triggerOnce" Value="0" />
```

```
<Parameter Name="triggeredOnEnd" Value="0" />
<Parameter Name="triggeredOnBegin" Value="0" />
<Parameter Name="requestType" Value="12" />
<Parameter Name="simpleEventID" Value="PullTrigger" />
</Event>
<Event Name="Try Reloading" Type="CGOStateEventEquipment" Start="0" End="100" Signal="reload">
  <Parameter Name="alwaysTrigger" Value="0" />
  <Parameter Name="triggerOnce" Value="0" />
  <Parameter Name="triggeredOnEnd" Value="0" />
  <Parameter Name="triggeredOnBegin" Value="0" />
  <Parameter Name="requestType" Value="4" />
</Event>
<Event Name="Check equipment mode" Type="CGOStateEventInventory" Start="0" End="100">
  <Parameter Name="alwaysTrigger" Value="0" />
  <Parameter Name="triggerOnce" Value="0" />
  <Parameter Name="triggeredOnEnd" Value="0" />
  <Parameter Name="triggeredOnBegin" Value="0" />
  <Parameter Name="requestType" Value="25" />
  <Parameter Name="simpleEventID" Value="" />
</Event>
<Event Name="toggle gadget" Type="CGOStateEventInventory" Start="0" End="100" Signal="toggle_gadget">
  <Parameter Name="alwaysTrigger" Value="0" />
  <Parameter Name="triggerOnce" Value="0" />
  <Parameter Name="triggeredOnEnd" Value="0" />
  <Parameter Name="triggeredOnBegin" Value="0" />
  <Parameter Name="requestType" Value="32" />
  <Parameter Name="simpleEventID" Value="" />
</Event>
<Event Name="try exit" Type="CGOStateEventVehicle" Start="0" End="100" Signal="exitvehicle">
  <Parameter Name="alwaysTrigger" Value="0" />
  <Parameter Name="triggerOnce" Value="0" />
  <Parameter Name="triggeredOnEnd" Value="0" />
  <Parameter Name="triggeredOnBegin" Value="0" />
  <Parameter Name="requestType" Value="11" />
</Event>
<Sink Name="switch gadget" Start="0" End="100">
  <Connection Target="::Vehicles/Vehicles/States/HolsterSwitchGadget" Signal="switch" />
</Sink>
<Sink Name="apply syringe" Start="0" End="100">
  <Connection Target="::Vehicles/Vehicles/States/PassengerHolsterGadgetSyringe" Signal="apply_syringe" />
</Sink>
<Sink Name="malaria pill" Start="0" End="100">
  <Connection Target="::Vehicles/Vehicles/States/HolsterGadgetPill" Signal="take_malaria_pill" />
</Sink>
<Sink Name="Fire Bullets" Start="0" End="100">
  <Connection Target="::Vehicles/Vehicles/States/PassengerFireBullets" Signal="fire_bullet" />
</Sink>
<Sink Name="Exit Vehicle" Start="0" End="100">
  <Connection Target="::Vehicles/Vehicles/States/PassengerExitHolster" Signal="exitvehicle_now" />
</Sink>
<Sink Name="Change Seat" Start="0" End="100">
  <Connection Target="::Vehicles/Vehicles/States/HoslterGadgetChangeSeat" Signal="change_seat_now" />
</Sink>
<Sink Name="Sink1" Start="0" End="100">
  <Connection Target="::Vehicles/Vehicles/States/PassengerUseIED" Signal="useied" />
</Sink>
<Sink Name="Holster Weapon" Start="0" End="100">
  <Connection Target="::Vehicles/Vehicles/States/DriverHolsterWeapon" Signal="HolsterWeapons" />
</Sink>
<Sink Name="Holster Weapon" Start="0" End="100">
  <Connection Target="::Vehicles/Vehicles/States/DriverHolsterWeapon" Signal="select_secondary_weapon" />
</Sink>
<Sink Name="Throw grenade - Driving" Start="0" End="100">
  <Connection Target="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Driver Lowering arms" Signal="driver_throw_grenade" />
</Sink>
</State>
<State FullName="::Vehicles/Vehicles/States/DriverHolsterWeapon" Type="CGOStateAnim">
  <Parameter Name="groups" />
  <Parameter Name="duration" Value="0" />
  <Parameter Name="signalpriorities" />
  <Parameter Name="forceAnim" Value="0" />
  <Parameter Name="syncAnimDuration" Value="0" />
  <Parameter Name="animStatelD" Value="0" />
  <Parameter Name="layerStatelD" Value="Pawn_Generic_Holster" />
  <Parameter Name="gestureStatelD" Value="-2" />
  <Parameter Name="followTerrain" Value="0" />
  <Parameter Name="MoveLayer" Value="-1" />
  <Connection Target="::Vehicles/Vehicles/States/Driving" />
  <Event Name="Holster" Type="CGOStateEventInventory" Start="100" End="100">
    <Parameter Name="alwaysTrigger" Value="1" />
    <Parameter Name="triggerOnce" Value="1" />
    <Parameter Name="triggeredOnEnd" Value="1" />
    <Parameter Name="triggeredOnBegin" Value="0" />
    <Parameter Name="requestType" Value="4" />
    <Parameter Name="simpleEventID" Value="" />
  </Event>
</State>
<State FullName="::Vehicles/Vehicles/States/PassengerHolsterGadgetSyringe" Type="CGOStateAnim">
  <Parameter Name="groups" />
  <Parameter Name="duration" Value="0" />
```

```
<Parameter Name="signalpriorities" />
<Parameter Name="forceAnim" Value="0" />
<Parameter Name="syncAnimDuration" Value="0" />
<Parameter Name="animStatelD" Value="0" />
<Parameter Name="layerStatelD" Value="Pawn_Generic_Holster" />
<Parameter Name="gestureStatelD" Value="0" />
<Parameter Name="followTerrain" Value="0" />
<Parameter Name="MoveLayer" Value="-1" />
<Connection Target="::Vehicles/Vehicles/States/PassengerSyringeDriving" />
<Event Name="holster" Type="CGOStateEventInventory" Start="99" End="100">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="1" />
    <Parameter Name="triggeredOnEnd" Value="1" />
    <Parameter Name="triggeredOnBegin" Value="0" />
    <Parameter Name="requestType" Value="4" />
    <Parameter Name="simpleEventID" Value="" />
</Event>
</State>
<State FullName="::Vehicles/Vehicles/States/PassengerSyringeDriving" Type="CGOStateAnim">
    <Parameter Name="groups" />
    <Parameter Name="duration" Value="0" />
    <Parameter Name="signalpriorities" />
    <Parameter Name="forceAnim" Value="0" />
    <Parameter Name="syncAnimDuration" Value="0" />
    <Parameter Name="animStatelD" Value="0" />
    <Parameter Name="layerStatelD" Value="pawn_generic_healsyringe" />
    <Parameter Name="gestureStatelD" Value="0" />
    <Parameter Name="followTerrain" Value="0" />
    <Parameter Name="MoveLayer" Value="-1" />
    <Connection Target="::Vehicles/Vehicles/States/PassengerDrawWeapon" />
    <Event Name="finish" Type="CGOStateEventHeal" Start="99" End="100">
        <Parameter Name="alwaysTrigger" Value="0" />
        <Parameter Name="triggerOnce" Value="1" />
        <Parameter Name="triggeredOnEnd" Value="1" />
        <Parameter Name="triggeredOnBegin" Value="0" />
        <Parameter Name="requestType" Value="1" />
    </Event>
    <Event Name="cinematic input" Type="CGOStateEventInput" Start="0" End="1">
        <Parameter Name="alwaysTrigger" Value="0" />
        <Parameter Name="triggerOnce" Value="1" />
        <Parameter Name="triggeredOnEnd" Value="0" />
        <Parameter Name="triggeredOnBegin" Value="1" />
        <Parameter Name="requestType" Value="2" />
        <Parameter Name="actionMapName" Value="cinematic" />
    </Event>
    <Event Name="pop input" Type="CGOStateEventInput" Start="99" End="100">
        <Parameter Name="alwaysTrigger" Value="0" />
        <Parameter Name="triggerOnce" Value="1" />
        <Parameter Name="triggeredOnEnd" Value="1" />
        <Parameter Name="triggeredOnBegin" Value="0" />
        <Parameter Name="requestType" Value="5" />
        <Parameter Name="actionMapName" Value="cinematic" />
    </Event>
</State>
```

Step 3: Editing the ‘UseGadget’ state

vehicles.gosm.xml (\patch_unpack\scripts\engine\objects\pawn\statemachine\)

The ‘UseGadget’ state is used when the player is using the map or phone. We are going to add the ability to draw your weapon and add a script that will holster the gadget before drawing.

The ‘UseGadget’ state has this title:

```
<State FullName="::Vehicles/Vehicles/States/UseGadget" Type="CGOStateAnim">
```

Add the following to this section:

```
<Event Name="Draw Weapon" Type="CGOStateEventInventory" Start="0" End="100" Signal="select_secondary_weapon">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="0" />
    <Parameter Name="triggeredOnEnd" Value="0" />
    <Parameter Name="triggeredOnBegin" Value="0" />
    <Parameter Name="requestType" Value="11" />
    <Parameter Name="simpleEventID" Value="" />
</Event>
<Sink Name="Draw Weapon" Start="0" End="100">
    <Connection Target="::Vehicles/Vehicles/States/HolsterToDrawGadget" Signal="select_secondary_weapon" />
</Sink>
```

Your complete section should look like this:

```
<State FullName="::Vehicles/Vehicles/States/UseGadget" Type="CGOStateAnim">
    <Parameter Name="groups" />
    <Parameter Name="duration" Value="0" />
```

```
<Parameter Name="signalpriorities" />
<Parameter Name="forceAnim" Value="0" />
<Parameter Name="syncAnimDuration" Value="0" />
<Parameter Name="animStatelD" Value="0" />
<Parameter Name="layerStatelD" Value="Pawn_Generic_Aim" />
<Parameter Name="gestureStatelD" Value="0" />
<Parameter Name="followTerrain" Value="0" />
<Parameter Name="MoveLayer" Value="-1" />
<Event Name="try exit" Type="CGOStateEventVehicle" Start="0" End="100" Signal="exitvehicle">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="0" />
    <Parameter Name="triggeredOnEnd" Value="0" />
    <Parameter Name="triggeredOnBegin" Value="0" />
    <Parameter Name="requestType" Value="11" />
</Event>
<Event Name="toggle gadget" Type="CGOStateEventInventory" Start="0" End="100" Signal="toggle_gadget">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="0" />
    <Parameter Name="triggeredOnEnd" Value="0" />
    <Parameter Name="triggeredOnBegin" Value="0" />
    <Parameter Name="requestType" Value="32" />
    <Parameter Name="simpleEventID" Value="" />
</Event>
<Event Name="try heal" Type="CGOStateEventHeal" Start="0" End="100" Signal="heal">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="0" />
    <Parameter Name="triggeredOnEnd" Value="0" />
    <Parameter Name="triggeredOnBegin" Value="0" />
    <Parameter Name="requestType" Value="0" />
</Event>
<Event Name="Draw Weapon" Type="CGOStateEventInventory" Start="0" End="100" Signal="select_secondary_weapon">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="0" />
    <Parameter Name="triggeredOnEnd" Value="0" />
    <Parameter Name="triggeredOnBegin" Value="0" />
    <Parameter Name="requestType" Value="11" />
    <Parameter Name="simpleEventID" Value="" />
</Event>
<Sink Name="Draw Weapon" Start="0" End="100">
    <Connection Target="::Vehicles/Vehicles/States/HolsterToDrawGadget" Signal="select_secondary_weapon" />
</Sink>
<Sink Name="switch gadget" Start="0" End="100">
    <Connection Target="::Vehicles/Vehicles/States/HolsterSwitchGadget" Signal="switch" />
</Sink>
<Sink Name="flip map" Start="0" End="100">
    <Connection Target="::Vehicles/Vehicles/States/FlipMapVehicle" Signal="flipside" />
</Sink>
<Sink Name="exit vehicle" Start="0" End="100">
    <Connection Target="::Vehicles/Vehicles/States/HolsterGadgetExitVehicle" Signal="exitvehicle_now" />
</Sink>
<Sink Name="holster gadget" Start="0" End="100">
    <Connection Target="::Vehicles/Vehicles/States/HolsterGadget" Signal="holsterweapon_now" />
</Sink>
<Sink Name="apply syringe" Start="0" End="100">
    <Connection Target="::Vehicles/Vehicles/States/HolsterGadgetSyringe" Signal="apply_syringe" />
</Sink>
<Sink Name="malaria pill" Start="0" End="100">
    <Connection Target="::Vehicles/Vehicles/States/HolsterGadgetPill" Signal="take_malaria_pill" />
</Sink>
<Sink Name="Change Seat" Start="0" End="100">
    <Connection Target="::Vehicles/Vehicles/States/HoslterGadgetChangeSeat" Signal="change_seat_now" />
</Sink>
<Sink Name="Jump out" Start="0" End="100">
    <Connection Target="::Vehicles/Vehicles/States/HolsterGadgetExitVehicle" Signal="jumpout_of_vehicle" />
</Sink>
<Sink Name="holster the phone" Start="0" End="100">
    <Connection Target="::Vehicles/Vehicles/States/HolsterGadget" Signal="select_next_weapon" />
</Sink>
</State>
```

Now add this section directly below:

```
<State FullName="::Vehicles/Vehicles/States/HolsterToDrawGadget" Type="CGOStateAnim">
    <Parameter Name="groups" />
    <Parameter Name="duration" Value="0" />
    <Parameter Name="signalpriorities" />
    <Parameter Name="forceAnim" Value="0" />
    <Parameter Name="syncAnimDuration" Value="0" />
    <Parameter Name="animStatelD" Value="0" />
    <Parameter Name="layerStatelD" Value="Pawn_Generic_Holster" />
    <Parameter Name="gestureStatelD" Value="0" />
    <Parameter Name="followTerrain" Value="0" />
    <Parameter Name="MoveLayer" Value="-1" />
    <Connection Target="::Vehicles/Vehicles/States/PassengerDrawWeapon" />
    <Event Name="Holster" Type="CGOStateEventInventory" Start="99" End="100">
        <Parameter Name="alwaysTrigger" Value="0" />
        <Parameter Name="triggerOnce" Value="1" />
        <Parameter Name="triggeredOnEnd" Value="1" />
        <Parameter Name="triggeredOnBegin" Value="0" />
    </Event>
</State>
```

```

    <Parameter Name="requestType" Value="4" />
    <Parameter Name="simpleEventID" Value="" />
  </Event>
</State>
```

Step 4: Editing other passenger states

vehicles.gosm.xml (\patch_unpack\scripts\engine\objects\pawn\statemachine\)

There are a few other passenger sections that need to be edited so everything works together.

1. <State FullName="::Vehicles/Vehicles/States/PassengerFireBullets" Type="CGOStateEquipment">

Within this section find these two lines:

```

<Parameter Name="animStateID" Value="Pawn_Generic_PassengerVehicle" />
<Parameter Name="layerStateID" Value="Pawn_Generic_Shoot" />
```

Edit them to this:

```

<Parameter Name="animStateID" Value="Pawn_Generic_DrivingVehicule" />
<Parameter Name="layerStateID" Value="Pawn_Generic_Aim" />
```

2. <State FullName="::Vehicles/Vehicles/States/PassengerJam" Type="CGOStateAnim">

Within this section find this line:

```

<Parameter Name="animStateID" Value="Pawn_Generic_PassengerVehicle" />
```

Edit it to this:

```

<Parameter Name="animStateID" Value="Pawn_Generic_DrivingVehicule" />
```

3. <State FullName="::Vehicles/Vehicles/States/PassengerTryUnJam" Type="CGOStateAnim">

Within this section find this line:

```

<Parameter Name="animStateID" Value="Pawn_Generic_PassengerVehicle" />
```

Edit it to this:

```

<Parameter Name="animStateID" Value="Pawn_Generic_DrivingVehicule" />
```

4. <State FullName="::Vehicles/Vehicles/States/PassengerUnJamSuccess" Type="CGOStateEquipment">

Within this section find this line:

```

<Parameter Name="animStateID" Value="Pawn_Generic_PassengerVehicle" />
```

Edit it to this:

```

<Parameter Name="animStateID" Value="Pawn_Generic_DrivingVehicule" />
```

Step 5: Adding everything to the existing driving systems

vehicles.gosm.xml (\patch_unpack\scripts\engine\objects\pawn\statemachine\)

For this step we are going to add different states into the existing driving systems. These systems are basically just lists of titles. You’ll see that below these titles there are already lists, you simply need to add the new ones to the bottom of them.

1. <Group FullName="::Vehicles/Vehicles/AttachedToVehicle" Type="BaseGroup">

Add these to the list:

```

<StateRef Path="::Vehicles/Vehicles/States/HolsterToDrawGadget" />
<StateRef Path="::Vehicles/Vehicles/States/DriverDrawWeapon" />
<StateRef Path="::Vehicles/Vehicles/States/DriverHolsterWeapon" />
<StateRef Path="::Vehicles/Vehicles/States/PassengerHolsterGadgetSyringe" />
<StateRef Path="::Vehicles/Vehicles/States/PassengerSyringeDriving" />
```

2. <Group FullName="::Vehicles/Vehicles/VehicleBackups" Type="BaseGroup">

Add these to the list:

```
<StateRef Path="::Vehicles/Vehicles/States/HolsterToDrawGadget" />
<StateRef Path="::Vehicles/Vehicles/States/DriverDrawWeapon" />
<StateRef Path="::Vehicles/Vehicles/States/DriverHolsterWeapon" />
<StateRef Path="::Vehicles/Vehicles/States/PassengerHolsterGadgetSyringe" />
<StateRef Path="::Vehicles/Vehicles/States/PassengerSyringeDriving" />
```

3. <Group FullName="::Vehicles/Vehicles/SittingGroup" Type="BaseGroup">

For this one we are going to combine the “SittingGroup” section with the “Passenger section. So highlight both of these sections:

```
<Group FullName="::Vehicles/Vehicles/SittingGroup" Type="BaseGroup">
  <StateRef Path="::Vehicles/Vehicles/States/Driving" />
  <StateRef Path="::Vehicles/Vehicles/States/DrawGadget" />
  <StateRef Path="::Vehicles/Vehicles/States/UseGadget" />
  <StateRef Path="::Vehicles/Vehicles/States/HolsterGadget" />
  <StateRef Path="::Vehicles/Vehicles/States/HolsterSwitchGadget" />
  <StateRef Path="::Vehicles/Vehicles/States/HolsterGadgetSyringe" />
  <StateRef Path="::Vehicles/Vehicles/States/HolsterGadgetPill" />
  <StateRef Path="::Vehicles/Vehicles/States/FlipMapVehicle" />
  <StateRef Path="::Vehicles/Vehicles/States/SyringeDriving" />
  <StateRef Path="::Vehicles/Vehicles/States/PillDriving" />
  <StateRef Path="::Vehicles/Vehicles/States/HolsterGadgetExitVehicle" />
  <StateRef Path="::Vehicles/Vehicles/States/HoslterGadgetChangeSeat" />
  <Event Name="StandUp" Type="CGOStateEventVehicle" Position="End">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="0" />
    <Parameter Name="triggeredOnEnd" Value="0" />
    <Parameter Name="triggeredOnBegin" Value="0" />
    <Parameter Name="requestType" Value="2" />
  </Event>
  <Event Name="Sit" Type="CGOStateEventVehicle" Position="Begin">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="0" />
    <Parameter Name="triggeredOnEnd" Value="0" />
    <Parameter Name="triggeredOnBegin" Value="0" />
    <Parameter Name="requestType" Value="1" />
  </Event>
  <Event Name="Vehicle Beautifier" Type="CGOStateEventBeautifier" Start="0" End="100">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="1" />
    <Parameter Name="triggeredOnEnd" Value="0" />
    <Parameter Name="triggeredOnBegin" Value="0" />
    <Parameter Name="action" Value="1" />
    <Parameter Name="context" Value="vehicle" />
  </Event>
</Group>
<Group FullName="::Vehicles/Vehicles/Passenger" Type="BaseGroup">
  <StateRef Path="::Vehicles/Vehicles/States/Passenger" />
  <StateRef Path="::Vehicles/Vehicles/States/PassengerFireBullets" />
  <StateRef Path="::Vehicles/Vehicles/States/PassengerDrawWeapon" />
  <StateRef Path="::Vehicles/Vehicles/States/PassengerReloading" />
  <StateRef Path="::Vehicles/Vehicles/States/PassengerJam" />
  <StateRef Path="::Vehicles/Vehicles/States/PassengerTryUnJam" />
  <StateRef Path="::Vehicles/Vehicles/States/PassengerUnJamSuccess" />
  <StateRef Path="::Vehicles/Vehicles/States/PassengerExitHolster" />
  <StateRef Path="::Vehicles/Vehicles/States/PassengerChangeSeatHolster" />
  <StateRef Path="::Vehicles/Vehicles/States/HolsterIED" />
  <StateRef Path="::Vehicles/Vehicles/States/PassengerUseIED" />
  <Event Name="Sit" Type="CGOStateEventVehicle" Position="Begin">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="1" />
    <Parameter Name="triggeredOnEnd" Value="0" />
    <Parameter Name="triggeredOnBegin" Value="1" />
    <Parameter Name="requestType" Value="1" />
  </Event>
  <Event Name="Stand Up" Type="CGOStateEventVehicle" Position="End">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="1" />
    <Parameter Name="triggeredOnEnd" Value="1" />
    <Parameter Name="triggeredOnBegin" Value="0" />
    <Parameter Name="requestType" Value="2" />
  </Event>
  <Event Name="Push Action Map" Type="CGOStateEventInput" Position="Begin">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="1" />
    <Parameter Name="triggeredOnEnd" Value="0" />
    <Parameter Name="triggeredOnBegin" Value="1" />
    <Parameter Name="requestType" Value="2" />
    <Parameter Name="actionMapName" Value="passenger" />
  </Event>
  <Event Name="Pop Action Map" Type="CGOStateEventInput" Position="End">
    <Parameter Name="alwaysTrigger" Value="0" />
    <Parameter Name="triggerOnce" Value="0" />
    <Parameter Name="triggeredOnEnd" Value="0" />
    <Parameter Name="triggeredOnBegin" Value="0" />
  </Event>
```

```
        <Parameter Name="requestType" Value="5" />
        <Parameter Name="actionMapName" Value="passenger" />
    </Event>
</Group>
```

With all of the above highlighted, paste this over it:

```
<Group FullName="::Vehicles/Vehicles/SittingGroup" Type="BaseGroup">
    <StateRef Path="::Vehicles/Vehicles/States/Driving" />
    <StateRef Path="::Vehicles/Vehicles/States/DrawGadget" />
    <StateRef Path="::Vehicles/Vehicles/States/UseGadget" />
    <StateRef Path="::Vehicles/Vehicles/States/HolsterGadget" />
    <StateRef Path="::Vehicles/Vehicles/States/HolsterSwitchGadget" />
    <StateRef Path="::Vehicles/Vehicles/States/HolsterGadgetSyringe" />
    <StateRef Path="::Vehicles/Vehicles/States/HolsterGadgetPill" />
    <StateRef Path="::Vehicles/Vehicles/States/FlipMapVehicle" />
    <StateRef Path="::Vehicles/Vehicles/States/SyringeDriving" />
    <StateRef Path="::Vehicles/Vehicles/States/PillDriving" />
    <StateRef Path="::Vehicles/Vehicles/States/HolsterGadgetExitVehicle" />
    <StateRef Path="::Vehicles/Vehicles/States/HoslterGadgetChangeSeat" />
    <StateRef Path="::Vehicles/Vehicles/States/Passenger" />
    <StateRef Path="::Vehicles/Vehicles/States/PassengerFireBullets" />
    <StateRef Path="::Vehicles/Vehicles/States/PassengerDrawWeapon" />
    <StateRef Path="::Vehicles/Vehicles/States/PassengerReloading" />
    <StateRef Path="::Vehicles/Vehicles/States/PassengerJam" />
    <StateRef Path="::Vehicles/Vehicles/States/PassengerTryUnJam" />
    <StateRef Path="::Vehicles/Vehicles/States/PassengerUnJamSuccess" />
    <StateRef Path="::Vehicles/Vehicles/States/PassengerExitHolster" />
    <StateRef Path="::Vehicles/Vehicles/States/PassengerChangeSeatHolster" />
    <StateRef Path="::Vehicles/Vehicles/States/HolsterIED" />
    <StateRef Path="::Vehicles/Vehicles/States/PassengerUseIED" />
    <StateRef Path="::Vehicles/Vehicles/States/HolsterToDrawGadget" />
    <StateRef Path="::Vehicles/Vehicles/States/DriverDrawWeapon" />
    <StateRef Path="::Vehicles/Vehicles/States/DriverHolsterWeapon" />
    <StateRef Path="::Vehicles/Vehicles/States/PassengerHolsterGadgetSyringe" />
    <StateRef Path="::Vehicles/Vehicles/States/PassengerSyringeDriving" />
    <StateRef Path="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Driver Lowering arms" />
    <StateRef Path="::Pawn Weapons/Weapon Mechanics/States/Throwing grenade/Player/Driver Throwing grenade" />
    <Event Name="Sit" Type="CGOStateEventVehicle" Position="Begin">
        <Parameter Name="alwaysTrigger" Value="0" />
        <Parameter Name="triggerOnce" Value="1" />
        <Parameter Name="triggeredOnEnd" Value="0" />
        <Parameter Name="triggeredOnBegin" Value="1" />
        <Parameter Name="requestType" Value="1" />
    </Event>
    <Event Name="Stand Up" Type="CGOStateEventVehicle" Position="End">
        <Parameter Name="alwaysTrigger" Value="0" />
        <Parameter Name="triggerOnce" Value="1" />
        <Parameter Name="triggeredOnEnd" Value="1" />
        <Parameter Name="triggeredOnBegin" Value="0" />
        <Parameter Name="requestType" Value="2" />
    </Event>
    <Event Name="Vehicle Beautifier" Type="CGOStateEventBeautifier" Start="0" End="100">
        <Parameter Name="alwaysTrigger" Value="0" />
        <Parameter Name="triggerOnce" Value="1" />
        <Parameter Name="triggeredOnEnd" Value="0" />
        <Parameter Name="triggeredOnBegin" Value="0" />
        <Parameter Name="action" Value="1" />
        <Parameter Name="context" Value="vehicle" />
    </Event>
</Group>
```

4. <Group FullName="::Vehicles/Vehicles/VehicleCanUseGadget" Type="BaseGroup">

Add this to the list:

```
<StateRef Path="::Vehicles/Vehicles/States/Passenger" />
```

5. <Group FullName="::Vehicles/Vehicles/VehicleNoNearZ" Type="BaseGroup">

Add this to the list:

```
<StateRef Path="::Vehicles/Vehicles/States/HolsterToDrawGadget" />
<StateRef Path="::Vehicles/Vehicles/States/DriverDrawWeapon" />
<StateRef Path="::Vehicles/Vehicles/States/DriverHolsterWeapon" />
<StateRef Path="::Vehicles/Vehicles/States/PassengerHolsterGadgetSyringe" />
<StateRef Path="::Vehicles/Vehicles/States/PassengerSyringeDriving" />
```

6. <Group FullName="::Vehicles/Vehicles/DriverActionMap" Type="BaseGroup">

Add this to the list:

```
<StateRef Path="::Vehicles/Vehicles/States/Passenger" />
<StateRef Path="::Vehicles/Vehicles/States/PassengerFireBullets" />
```

```
<StateRef Path="::Vehicles/Vehicles/States/PassengerDrawWeapon" />
<StateRef Path="::Vehicles/Vehicles/States/PassengerReloading" />
<StateRef Path="::Vehicles/Vehicles/States/PassengerJam" />
<StateRef Path="::Vehicles/Vehicles/States/PassengerTryUnJam" />
<StateRef Path="::Vehicles/Vehicles/States/PassengerUnJamSuccess" />
<StateRef Path="::Vehicles/Vehicles/States/PassengerExitHolster" />
<StateRef Path="::Vehicles/Vehicles/States/PassengerChangeSeatHolster" />
<StateRef Path="::Vehicles/Vehicles/States/HolsterToDrawGadget" />
<StateRef Path="::Vehicles/Vehicles/States/DriverDrawWeapon" />
<StateRef Path="::Vehicles/Vehicles/States/DriverHolsterWeapon" />
<StateRef Path="::Vehicles/Vehicles/States/PassengerHolsterGadgetSyringe" />
<StateRef Path="::Vehicles/Vehicles/States/PassengerSyringeDriving" />
```

Step 6: Adding new controls

inputactionmapcommon.xml (\patch_unpack\config\)

There are two parts to this, adding new controls and editing existing ones.

1. Adding new controls

Find the section with this title: <ActionMap name="common_driving">

Add these lines somewhere below the title:

```
<Binding input="mouse:lb" action="press" signal="startshooting"/>
<Binding input="mouse:lb" action="release" signal="stopshooting"/>
<Binding input="kb:r" action="press" signal="reload"/>
<Binding input="kb:2" action="press" signal="select_secondary_weapon"/>
<Binding input="kb:f" action="press" signal="select_next_throw_gadget"/>
<Binding input="kb:q" action="press" signal="driver_throw_grenade"/>
<Binding input="kb:x" action="press" signal="HolsterWeapons"/>

<Binding input="pad:right_thumb_push" action="press" signal="startshooting"/>
<Binding input="pad:right_thumb_push" action="release" signal="stopshooting"/>
<Binding input="pad:x" action="press" signal="reload"/>
<Binding input="pad:right" action="press" signal="select_secondary_weapon"/>
<Binding input="pad:left" action="press" signal="select_next_throw_gadget"/>
<Binding input="pad:right_shoulder" action="press" signal="driver_throw_grenade"/>
<Binding input="pad:down" action="press" signal="HolsterWeapons"/>
```

2. Editing existing keyboard controls

We are going to free up the left mouse button for shooting by removing it’s binding and making it so that you can look back using only the right mouse button.

Find this section:

```
<CompoundInput name="look_pov" device="mouse">
    <Binding input="rb" axis="0"/>
    <Binding input="lb" axis="0" invert="1"/>
    <Binding input="" axis="1"/>
</CompoundInput>
```

Change it to this:

```
<CompoundInput name="look_pov" device="mouse">
    <Binding input="rb" axis="1" invert="1"/>
    <Binding input="" axis="0"/>
</CompoundInput>
```

3. Editing existing controller controls

First, find this section:

```
<CompoundInput name="look_pov" device="pad">
    <Binding input="right_thumb_push" axis="1" invert="1"/>
    <Binding input="" axis="0"/>
</CompoundInput>
```

Change it to this:

```
<CompoundInput name="look_pov" device="pad">
    <Binding input="left_thumb_push" axis="1" invert="1"/>
    <Binding input="" axis="0"/>
</CompoundInput>
```

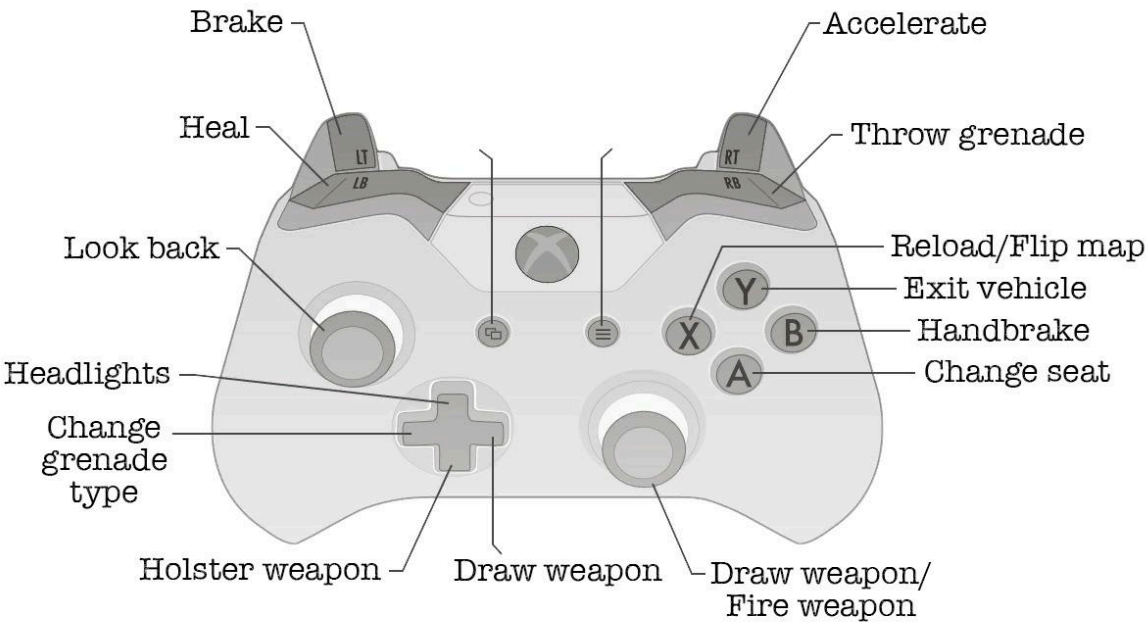
Also, find this line:

```
<Binding input="pad:right_shoulder" action="press" signal="toggle_headlights"/>
```

Change it to this:

```
<Binding input="pad:up" action="press" signal="toggle_headlights"/>
```

Once you’ve made these changes, these are the new controller bindings when driving vehicles:



Step 7: Make the new controls rebindable

inputactionmapcommon.xml (\patch_unpack\config\)

Controls being rebindable is controlled by the “import actionmap” lines directly below the titles of each section of this file.

As we haven’t added any brand new controls we just need the following lines into the “import actionmap” section of the driver controls section:

```
<Import actionmap="common_weapons_remap" optional=""/>
<Import actionmap="common_shoot_remap" optional=""/>
<Import actionmap="common_reload_remap" optional=""/>
```

Your complete section should look like this:

```
<ActionMap name="common_driving">
  <Import actionmap="common_driving_remap" optional=""/>
  <Import actionmap="common_gadget_remap" optional=""/>
  <Import actionmap="common_weapons_remap" optional=""/>
  <Import actionmap="common_shoot_remap" optional=""/>
  <Import actionmap="common_reload_remap" optional=""/>
```

Mission/exploration rewards

Story missions

gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)

Story mission rewards are controlled by the “diamondreward” stats within the “<StoryMission>” and “<LibraryMission>” sections.

Each mission has its own line where you can edit the individual rewards.

```
<Item act="1" id="A1SM02" name="FoolsErrand" diamondreward="20" buddyunlock="0" infbonus="5" achievement="killcaptain" />
```

Assassination missions

gamemodesconfig.xml (\patch_unpack\engine\gamemodes\)

Assassination mission rewards are controlled by the “AssassinationRewardWorld1” and “AssassinationRewardWorld2” stats.

The rewards for each map can be edited individually.

Convoy missions

convoymissions.unlockweapons.lua (\patch_unpack\domino\user\sidemissions\)

The weapons rewarded by each convoy mission can be swapped out within this file.

By swapping the names below, the displayed names of each weapon in the pop-up reward screen will also be changed automatically. You can also edit the weapon images shown in the pop-up reward with the “Convoy mission reward images” section of this guide.

There are no separate sections for each mission, you just search for the weapon and swap it with another. Each weapon is listed with its name from the weapon/upgrade shop section of “gamemodesconfig.xml”, here is a complete list:

- Makarov - makarov crate
- Silenced Makarov - 6p9 crate
- Star 45 - star45 crate
- Eagle 50 - de crate

- Mac 10 - mac10 crate
- Uzi - uzi crate

- G3KA4 - g3ka4 crate
- AK47 - ak47 crate
- FNFAL - fnfal crate
- M16 - m16 crate
- MP5 - mp5 crate

- Homeland 37 - ithaca crate
- SPAS 12 - spas12 crate
- USAS 12 - usas12 crate

- M1903 - m1903 crate
- Dragunov - dragunov crate
- AS50 - as50 crate
- Dart rifle - dart rifle crate

- PKM - pkm crate
- M249 - m249 crate

- Flare gun - flare crate
- Flamethrower - lpo50 crate

- M79 - m79 crate
- IEDs - ied crate
- RPG - rpg7 crate
- Carl G - carlgustaf crate
- Mortar - mortar crate
- MGL140 - mgl40 crate

For reference these are the default mission rewards:

Rewards			
Act I			
1st Mission	2nd Mission	3rd Mission	4th Mission
Star .45 Silent Makarov 6P9 Flare Pistol	MAC-10 AK-47 RPG-7	Silent MP-5 SPAS-12 LPO-50 Flamethrower	M-79 SVD Dart Rifle
Act II			
At the beginning of Act 2, all the weapons from Act I are unlocked automatically, so there is no need to do any of the missions in Act I.			
1st Mission	2nd Mission	3rd Mission	4th Mission
AS50 M-249 SAW	AR-16 Type 63 Mortar	USAS-12 Carl G Rocket Launcher	MGL-140

Diamond briefcases

Decoding required

xx_OA_MissionPickups.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

There are four different briefcase entries:

The briefcase from the tutorial - MissionPickups.DiamondBriefcase_TUTORIAL_ONLY
Briefcases that by default contain one diamond - MissionPickups.DiamondBriefcase_LVL1
Briefcases that by default contain two diamonds - MissionPickups.DiamondBriefcase_LVL2
Briefcases that by default contain three diamonds - MissionPickups.DiamondBriefcase_LVL3

The number of diamonds in each briefcase is controlled by the “nDiamonds” stat within each entry.

```
<value name="nDiamonds" hash="8ACA6BE0" type="BinHex">03</value>
```

Open world items/objects

Explosive Objects

```
xx_OA_Explosives.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
```

Every explosive object in the open world has an entry in this file:

- Explosives.BarrelDirectional01
- Explosives.ExplodingCar_PREFAB
- Explosives.ExplodingTruck_PREFAB
- Explosives.ExplosiveBarrel_NEW
- Explosives.GasBottle01
- Explosives.GasBottle2
- Explosives.GasBottle3
- Explosives.GasBottle4
- Explosives.GasCan01_NEW
- Explosives.GasCan02_NEW
- Explosives.GasPump
- Explosives.Generator_PREFAB
- Explosives.LiquidPropaneTank
- Explosives.LiquidPropaneTank_Small
- Explosives.OilTank_NEW
- Explosives.SmallPropaneTank
- Explosives.ThinPropaneTank

The most useful edit available here is changing the explosive properties of these objects.

All of the entries have an “ExtraStims” section where we can edit the explosive properties. In this section there may be two or three subsections under the titles “Stim”. Each “Stim” section is a different element of the explosion. We can tell the different explosive elements apart with the “selType” value, where “4” is a regular explosion and “7” is a fire explosion.

The main stats we can change here are: “nLevel” and “fRadius”.

“nLevel” controls the damage an explosion does. This doesn’t affect fire explosions as fire still does the same damage.

“fRadius” controls the size of an explosion.

This is an example regular explosion:

```
<object type="Stim">
  <value name="hidEventName" type="String">Stims</value>
  <value name="eventMask" type="UInt32">2</value>
  <value name="hidTargetEntityId" type="UInt64">18446744073709551615</value>
  <value hash="FC25E1F1" type="String"></value>
  <value name="sDetail" type="Hash">FFFFFFFF</value>
  <value name="selType" type="UInt32">4</value>
  <value name="nLevel" type="UInt32">15</value>
  <value name="fRadius" type="Float">10</value>
  <value name="bFalloff" type="Bool">True</value>
  <value name="nFalloffMinLevel" type="UInt32">1</value>
```

This is an example fire explosion:

```
<object type="Stim">
  <value name="selStimType" type="UInt32">0</value>
  <value name="hidEventName" type="String">Stims</value>
  <value name="eventMask" type="UInt32">2</value>
  <value name="hidTargetEntityId" type="UInt64">18446744073709551615</value>
  <value hash="FC25E1F1" type="String"></value>
  <value name="sDetail" type="Hash">FFFFFFFF</value>
  <value name="selType" type="UInt32">7</value>
  <value name="nLevel" type="UInt32">20</value>
  <value name="fRadius" type="Float">1</value>
  <value name="bFalloff" type="Bool">True</value>
```

<value name="nFalloffMinLevel" type="UInt32">8</value>

Weapons

xx_pickups.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

Every weapon found in the open world has an entry in this file. This includes weapons found in the armory, dropped by enemies, and those found in the open world either given by buddies for missions or in found in the wild like the golden ak47:

Weapon Name	Armory entry	Dropped by enemies entry	Open world entry
AK47	Weapons.AK47_new.WeaponStorage	Weapons.AK47_new.Dropped	
Golden AK47			Weapons.AK47_new.AK47_Gold
AS50	Weapons.AS50_new.WeaponStorage	Weapons.AS50_new.Dropped	Weapons.AS50_new.Persistent
Carl Gustaf	Weapons.CarlGustaf_new.WeaponStorage	Weapons.CarlGustaf_new.Dropped	Weapons.CarlGustaf_new.Persistent
Dart Rifle	Weapons.DartRifle_new.WeaponStorage	Weapons.DartRifle_new.Dropped	
Eagle .50	Weapons.DesertEagle_new.WeaponStorage	Weapons.DesertEagle_new.Dropped	
Dragunov	Weapons.Dragunov_new.WeaponStorage	Weapons.Dragunov_new.Dropped	
Flare Gun	Weapons.FlareGun_new.WeaponStorage	Weapons.FlareGun_new.Dropped	
FAL	Weapons.FNFAL_new.WeaponStorage	Weapons.FNFAL_new.Dropped	
G3KA4	Weapons.G3KA4_new.WeaponStorage	Weapons.G3KA4_new.Dropped	
IED	Weapons.IED_new.WeaponStorage	Weapons.IED_new.Dropped	
Ithaca	Weapons.Ithaca_new.WeaponStorage	Weapons.Ithaca_new.Dropped	
LPO50	Weapons.LPO50_new.WeaponStorage	Weapons.LPO50_new.Dropped	Weapons.LPO50_new.Persistent
M16	Weapons.M16_new.WeaponStorage	Weapons.M16_new.Dropped	Weapons.M16_new.Persistent
M1903	Weapons.M1903_new.WeaponStorage	Weapons.M1903_new.Dropped	
M249 Saw	Weapons.M249_Saw_new.WeaponStorage	Weapons.M249_Saw_new.Dropped	Weapons.M249_Saw_new.Persistent
M67		Weapons.M67.Dropped	
M79	Weapons.M79_new.WeaponStorage	Weapons.M79_new.Dropped	
MAC10	Weapons.MAC10_new.WeaponStorage	Weapons.MAC10_new.Dropped	
Makarov	Weapons.Makarov_new.WeaponStorage	Weapons.Makarov_new.Dropped	
MGL 140	Weapons.MGL140_new.WeaponStorage	Weapons.MGL140_new.Dropped	Weapons.MGL140_new.Persistent
Molotov		Weapons.Molotov.Dropped	
Mortar	Weapons.Mortar_new.WeaponStorage	Weapons.Mortar_new.Dropped	Weapons.Mortar_new.Persistent
MP5	Weapons.MP5_new.WeaponStorage	Weapons.MP5_new.Dropped	
PKM	Weapons.PKM_new.StorageRoom	Weapons.PKM_new.Dropped	
RPG7	Weapons.RPG7_new.StorageRoom	Weapons.RPG7_new.Dropped	Weapons.RPG7_new.Persistent
Silenced Makarov	Weapons.SilencedMakarov_6P9.StorageRoom	Weapons.SilencedMakarov_6P9.Dropped	
SPAS12	Weapons.SPAS12_new.StorageRoom	Weapons.SPAS12_new.Dropped	
Star 45	Weapons.Star45_new.StorageRoom	Weapons.Star45_new.Dropped	
USAS12	Weapons.USAS12_new.StorageRoom	Weapons.USAS12_new.Dropped	Weapons.USAS12_new.Persistent
Uzi	Weapons.Uzi_new.StorageRoom	Weapons.Uzi_new.Dropped	

Respawn time

xx_pickups.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

Respawn time of the weapons is controlled by the “fRespawnTime” stat in the “Components” section.

A value of “0” means that the weapons will never respawn, any other value is measured in seconds.

These timers only count down while you are in the same area as the weapon. If you leave the area and return so that the area is reloaded, the timer is reset.

<object type="Components">
 <object type="CPickupWeapon">
 <value name="hidHasAliasName" type="Bool">False</value>

```
<value name="bEnable" type="Bool">True</value>
<value name="fRespawnTime" type="Float">0.1</value>
<value name="bCustomBoundingBox" type="Bool">True</value>
```

Small Resource Pickups

This section will cover the small resource pickups in the game, so the small ammo/explosive/fuel/health boxes.

Ammo/explosive/fuel boxes - Ammo type/quantity

Decoding required

```
xx_pickups.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)
```

These are the entry titles of the different ammo/explosive/fuel boxes:

- Ammo.Small_Ammo_Pickup
- Ammo.Small_Explosive_Pickup
- Ammo.Small_Fuel_Pickup

Ammo type is controlled by two stats, “AB258E09” and “ammoAmmoType”. Gadget type (grenades/molotovs) is controlled by the “archGadgetType” stat.

Ammo quantity is controlled by the “iAmmoQuantity” stat and gadget quantity is controlled by the “iGadgetQuantity” stat.

The ammo types and amounts for each pickup type are shown in the table below. You can edit the quantities or add/remove ammo types between the different pickups.

Ammo.Small_Ammo_Pickup		Ammo.Small_Explosive_Pickup		Ammo.Small_Fuel_Pickup	
Ammo Type	Ammo Quantity	Ammo Type	Ammo Quantity	Ammo Type	Ammo Quantity
<u>Pistol ammo</u> AB258E09: 6465736572746561676C6500 ammoAmmoType: 6D6540FA	8	<u>Mortar ammo</u> AB258E09: 6D6F7274617200 ammoAmmoType: 4EE9BFD6	1	<u>Flamethrower ammo</u> AB258E09: 6675656C00 ammoAmmoType: 31BD6FE9	100
<u>Assault rifle ammo</u> AB258E09: 61737361756C747269666C6500 ammoAmmoType: BC6782FC	30	<u>RPG/Crossbow ammo</u> AB258E09: 726F636B657400 ammoAmmoType: CEB9BB1E	1	<u>Flare gun ammo</u> AB258E09: 666C61726500 ammoAmmoType: C86412FF	3
<u>Sniper rifle ammo</u> AB258E09: 736E697065727269666C6500 ammoAmmoType: 7D6BD5F2	5	<u>M79 ammo</u> AB258E09: 6D373900 ammoAmmoType: 704CA95D	2	<u>Molotovs</u> archGadgetType: gadgets.Grenades.Molotov	2
<u>Shotgun ammo</u> AB258E09: 73686F7467756E00 ammoAmmoType: EEAE53E1	6	<u>IED ammo</u> AB258E09: 69656400 ammoAmmoType: EA12131E	1		
<u>SMG ammo</u> AB258E09: 736D6700 ammoAmmoType: AA73EE0A	30	<u>MGL140 ammo</u> AB258E09: 6D676C31343000 ammoAmmoType: E710123D	4		
<u>LMG ammo</u> AB258E09: 6C6D6700 ammoAmmoType: BD090A47	50	<u>Grenades</u> archGadgetType: gadgets.Grenades.M67	2		
<u>Dart rifle ammo</u>	2				

AB258E09: 646172747300					
ammoAmmoType: FC2096BC					

Health boxes - Syrette quantity

Decoding required

xx_pickups.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

The small health boxes have a single entry, titled “pickups.Health.Syrette”.

The number of syrettes given by the small health pickups is controlled by the “iBullets” stat in the “Components” section.

```
<value hash="AB258E09" type="BinHex">737972696E676500</value>
  <value name="ammoAmmoType" hash="5957C8C7" type="Hash">FCD0CC7A</value> <!-- type="BinHex" value="7ACCD0FC" -->
  <value name="iBullets" hash="C38CDB93" type="Int32">1</value> <!-- type="BinHex" value="01000000" -->
```

Gadgets

Monocular

xx_gadgets.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

The monocular’s entry title in this file is “Equipped.Monocular”.

Look sensitivity

Decoding required

xx_gadgets.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

Look sensitivity of the monocular while aiming is controlled by the “fLookSensitivity” stat in the “UseStrategy” section.

The default value is “0.1” and you can decrease this value to reduce sensitivity.

```
<object hash="E1F6C228" type="UseStrategy">
  <object hash="1719D64A" type="Zoom">
    <value name="fFOV" hash="BEF721BA" type="Float">0.2</value> <!-- type="BinHex" value="CDCC4C3E" -->
    <value name="fTransitionTime" hash="0885811A" type="Float">0.5</value> <!-- type="BinHex" value="0000003F" -->
    <value name="fLookSensitivity" hash="B2E41011" type="Float">0.1</value> <!-- type="BinHex" value="CDCC4C3D" -->
```

Zoom

Decoding required

xx_gadgets.xml < entitylibrarypatchoverride.fcb (\patch_unpack\generated\)

Zoom level of the monocular is controlled by the “fFOV” stat in the “UseStrategy” section.

The default value is “0.2” and you can decrease this value to increase zoom.

```
<object hash="E1F6C228" type="UseStrategy">
  <object hash="1719D64A" type="Zoom">
    <value name="fFOV" hash="BEF721BA" type="Float">0.2</value> <!-- type="BinHex" value="CDCC4C3E" -->
    <value name="fTransitionTime" hash="0885811A" type="Float">0.5</value> <!-- type="BinHex" value="0000003F" -->
    <value name="fLookSensitivity" hash="B2E41011" type="Float">0.05</value> <!-- type="BinHex" value="CDCC4C3D" -->
```

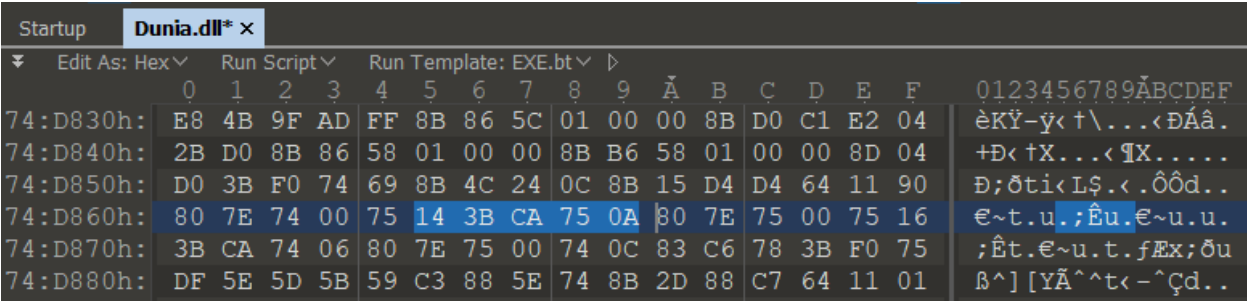
Sound

Bug fix - 9th Jackal tape repeating in map 2

Dunia.dll (\Far Cry 2\bin\)

Find the hex string “0A 3B CA 75 0A” and change it to “14 3B CA 75 0A”.

Your completed section should look like this:



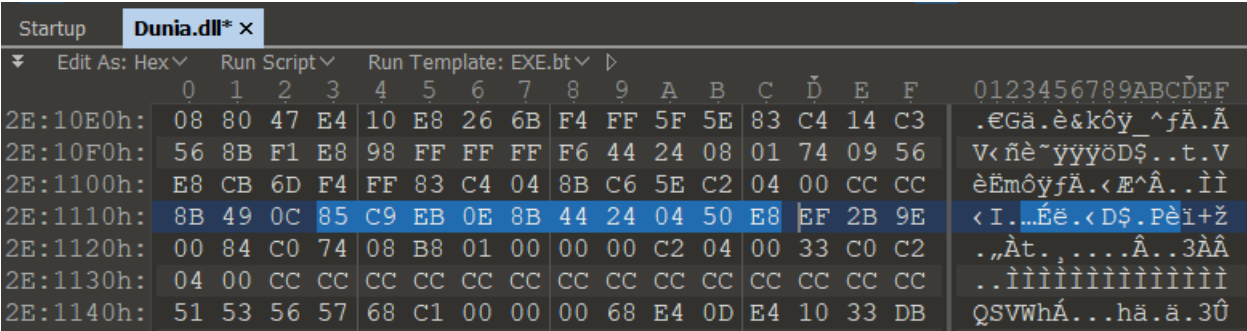
DLC unlocking

Predecessor missions

Dunia.dll (\\Far Cry 2\\bin\\)

Find the hex string “85 C9 74 16 8B 44 24 04 50 E8” and change it to “85 C9 **EB 0E** 8B 44 24 04 50 E8”.

Your completed section should look like this:



Primitive/Homemade machetes

To unlock the DLC machetes we need to add three new entries to the registry.

The first step is to access the registry by opening the “Registry Editor” application. This is in all Windows installations so just search for it in the start menu and it’ll be there.

Once open you’ll see that it shows a directory list on the left and the actual registry keys on the right.

In the directory section, navigate to \\HKEY_CURRENT_USER\\Software\\Ubisoft\\Far Cry 2\\.

It should look like this:



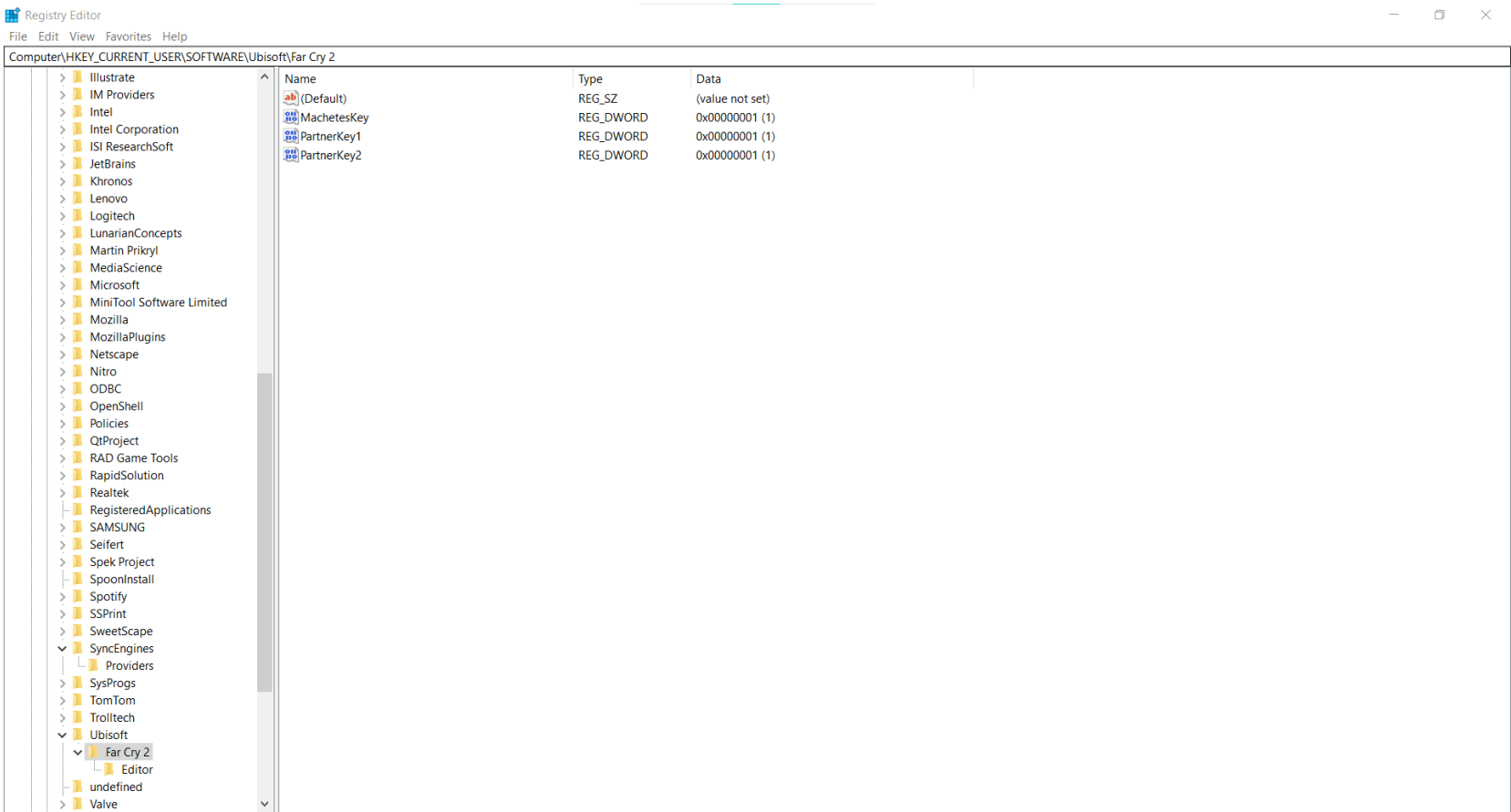
To create a new entry here, right click the section on the right, press “New” and then “DWORD (32-Bit) Value”.

You need to create three new keys in the same way, and call them “MachetesKey”, “PartnerKey1” and “PartnerKey2”.

We then need to change the data value of each of these keys. They each need to be changed to a value of 1.

To do this double click any of the keys and change the “Value data” to 1.

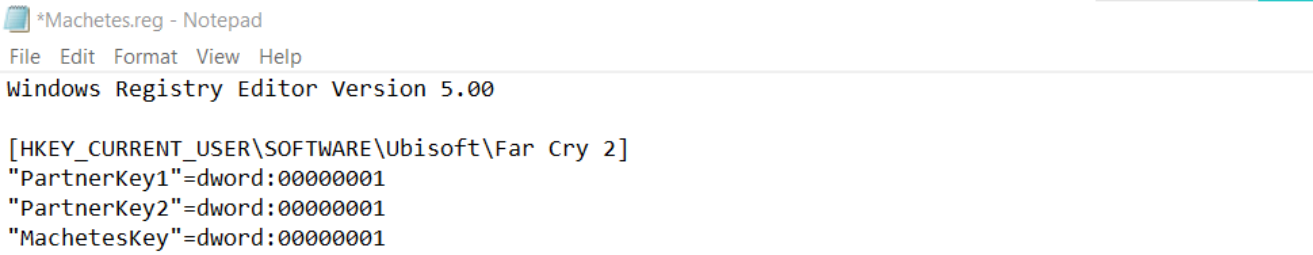
Do this to all of the keys and you’re done. It should look like this:



If you want to create an installer for this, highlight all of the three keys and press “File” and “Export”. Name the file whatever and save it.

Go to the file, right click it and press edit. It will then open in Notepad.

Once it’s open, delete all of it except the top section, so it looks like this:



Save the file and then when anyone else runs it the keys will be automatically installed.

Controls

Guide - Make a key rebindable

Step 1: Adding the key binding to the default controls list

defaultusercontrols.xml (\patch_unpack\config\)

To add a new key binding to the “Actions” in-game controls menu you need to add a line to the “CATEGORY_ACTIONS” section, for example:

<Control name="holster" key1="kb:x" actionmap="common_holster_remap" group="1" conflictmask="12"/>

The completed section should look something like this:

```
<Category name="CATEGORY_ACTIONS">
  <Control name="fire" key1="mouse:lb" actionmap="common_shoot_remap" group="-1" conflictmask="-1"/>
  <Control name="ironsight" key1="mouse:rb" actionmap="common_iron_remap" group="-1" conflictmask="-1"/>
  <Control name="reload" key1="kb:r" actionmap="common_reload_remap" group="1" conflictmask="12"/>
  <Control name="holster" key1="kb:x" actionmap="common_holster_remap" group="1" conflictmask="12"/>
  <Control name="sprint" key1="kb:lshift" actionmap="common_move_remap" group="1" conflictmask="12"/>
  <Control name="jump" key1="kb:space" actionmap="common_jump_remap" group="1" conflictmask="12"/>
  <Control name="crouch" key1="kb:c" actionmap="common_crouch_remap" group="1" conflictmask="12"/>
  <Control name="interact" key1="kb:e" actionmap="common_use_remap" group="1" conflictmask="12"/>
</Category>
```

Step 2: Link the changes to the default controls to the controls system

inputactionmapcommon.xml (\patch_unpack\config\)

To link our changes to the controls system we need to first find which action map the control is located under. There are several action maps in this file, under titles like this: <ActionMap name="common_weapons">

Once you’ve found the right section, we need to add a new line to the group directly under the title. There is a list of “Import actionmap” lines, and we’re going to create a new one, for example: <Import actionmap="common_holster_remap" optional=""/>

The completed section should look something like this:

```
<ActionMap name="common_weapons">
<Import actionmap="common_weapons_remap" optional=""/>
<Import actionmap="common_shoot_remap" optional=""/>
<Import actionmap="common_iron_remap" optional=""/>
<Import actionmap="common_reload_remap" optional=""/>
<Import actionmap="common_holster_remap" optional=""/>
```

Step 3: Add a new control label

\patch_pack\languages\ - Each language has its own folder and “oasisstrings.rml” file.

Find the section with the title “<section name="Actions">”.

We are going to add a new line to this section, referencing the “Control name” value from our new line in step 1. The “Control name” value should match the “string enum” value in the line we create in this file.

For example, it should look something like this:

```
<string enum="holster" value="Holster" />
```

Miscellaneous edits

Timescale

defaultgameconfig.xml (\patch_unpack\engine\settings\)

Timescale is controlled by the “TimeScale” stat near the top of this file.

The default value is 6, which means that time is sped up 6x so that an in-game 24 hours takes 4 hours, and an in-game hour takes 10 minutes.

```
TimeScale = "6"
```

Disabling intro videos

Option 1: Add a launch property

Right click your Far Cry 2 shortcut and press properties, either in Steam if using that or the actual shortcut itself.

In Steam you can add “-GameProfile_SkipIntroMovies 1” as a launch option, for regular windows add it at the end of the “Target” section.

```
-GameProfile_SkipIntroMovies 1
```

Option 2: Edit the game files

defaultgameconfig.xml (\patch_unpack\engine\settings\)

We can add a line to the top section of this file that says: SkipIntroMovies="1"

Change value to 1 to enable, 0 to disable.

```
Sensitivity_x = "1.0"
Sensitivity_y = "1.0"
Sensitivity = "0.9"
SkipIntroMovies="1"
Invert_x = "0"
```

Guide - Using the ‘Black Mamba’ buddy rescue mission

This guide will cover how to swap in the Black Mamba buddy rescue mission. It will replace one of the existing world 2 buddy rescue missions. Check out a video of it [here](#).

Step 1: Getting the world 2 scripting file

Unpack common.dat/.fat and find “master_world2.world2.lua” in \common_unpack\domino\user\. Paste this into your patch file with the same folder structure \patch_unpack\domino\user\.

Step 2: Editing in the new mission

master_world2.world2.lua (\patch_unpack\domino\user)

At the top of this file you can see a list of missions in world 2. There are two buddy rescue missions, shown with the following lua files:

Domino/User/A2BU06_OldBrewery.A2BU06_Mission.lua
Domino/User/A2BU07_DogonRing.A2BU07_Mission.lua

You can replace either one of these, Hunter has suggested replacing the Dogon Ring mission as it is more buggy.

To replace the buddy mission we are going to replace the referenced file with the following one:

Domino/User/A2BU05_Blackmamba.A2BU05_Mission.lua

If you have replaced the Dogon Ring mission then you complete section should look like this:

"Domino/User/A2BU06_OldBrewery.A2BU06_Mission.lua",
"Domino/User/A2BU05_Blackmamba.A2BU05_Mission.lua",
"Domino/User/A2LM07_RadioArmageddon.A2LM07_Mission.lua",

We now need to replace all the other references to the old file in pretty much the same way. I’m going to keep describing this as if you are replacing the Dogon Ring mission.

There is one other reference to “Domino/User/A2BU07_DogonRing.A2BU07_Mission.lua” which needs to be replaced with
"Domino/User/A2BU05_Blackmamba.A2BU05_Mission.lua".

There are also five references to the mission code “A2BU07” that need to be replaced with “A2BU05”.

Testing conditions/Cheats

These are conditions that can be useful for testing the effect of your changes.

God mode

Option 1: Add a launch property

Right click your Far Cry 2 shortcut and press properties, either in Steam if using that or the actual shortcut itself.

In Steam you can add “-GameProfile_GodMode 1” as a launch option, for regular windows add it at the end of the “Target” section.

-GameProfile_GodMode 1

Option 2: Edit the game files

defaultgameconfig.xml (\patch_unpack\engine\settings\)

God mode is controlled by the “GodMode” stat. Change value to 1 to enable, 0 to disable.

GodMode = "0"

Unlimited Ammo

Option 1: Add a launch property

Right click your Far Cry 2 shortcut and press properties, either in Steam if using that or the actual shortcut itself.

In Steam you can add “-GameProfile_UnlimitedAmmo 1” as a launch option, for regular windows add it at the end of the “Target” section.

```
-GameProfile_UnlimitedAmmo 1
```

Option 2: Edit the game files

```
defaultgameconfig.xml (\patch_unpack\engine\settings\)
```

Unlimited ammo is controlled by the “UnlimitedAmmo” stat. Change value to 1 to enable, 0 to disable.

```
UnlimitedAmmo = "0"
```

Unlimited weapon reliability

Option 1: Add a launch property

Right click your Far Cry 2 shortcut and press properties, either in Steam if using that or the actual shortcut itself.

In Steam you can add “-GameProfile_UnlimitedReliability 1” as a launch option, for regular windows add it at the end of the “Target” section.

```
-GameProfile_UnlimitedReliability 1
```

Option 2: Edit the game files

```
defaultgameconfig.xml (\patch_unpack\engine\settings\)
```

We can add a line to the top section of this file that says: SkipIntroMovies="1"

Change value to 1 to enable, 0 to disable.

```
Sensitivity_x = "1.0"  
Sensitivity_y = "1.0"  
Sensitivity = "0.9"  
UnlimitedReliability = "1"  
Invert_x = "0"
```

Unlock all weapons

Right click your Far Cry 2 shortcut and press properties, either in Steam if using that or the actual shortcut itself.

In Steam you can add “-GameProfile_AllWeaponsUnlock 1” as a launch option, for regular windows add it at the end of the “Target” section.

This will only unlock the weapons that are available in the current map, so if you do this in map 1 you won’t gain access to those that unlock in map 2.

```
-GameProfile_AllWeaponsUnlock 1
```

AI ignoring the player

Option 1: Add a launch property

Right click your Far Cry 2 shortcut and press properties, either in Steam if using that or the actual shortcut itself.

In Steam you can add “-GameProfile_IgnorePlayer 1” as a launch option, for regular windows add it at the end of the “Target” section.

-GameProfile_IgnorePlayer 1

Option 2: Edit the game files

defaultgameconfig.xml (\patch_unpack\engine\settings\)

The AI ignoring the player is controlled by the “IgnorePlayer” stat. Change value to 1 to enable, 0 to disable.

IgnorePlayer = "**0**"